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## **3 Phase Wire Types and Numbering**

## **Product**

When drawing multi-phase wires, AutoCAD Electrical only allows you to choose one wire type for the multi-phase wire connections. You may however wish for three phase wire connections to be drawn in the IEC standard of brown, black and grey coloured wires and have the numbering of the wires to the convention of #L1, #L2 and #L3. This can of course be done in a variety of methods.

The key to any company standard is to define the standards in the title block template (\*.DWT) as this will become available for all new drawings but you can also do this retrospectively within a current drawing and/or project.

To define the new wire types:

Select Schematic ribbon tab > Edit Wires/Wire Numbers panel > 🔀 Create Edit Wiretype

You can create wire types by function or by specific wire size/colour

Wire types by function may look similar to:

Used	Wire Color	Size	Layer Name	Wire Numbering	USER1	USER2
	RED	1.0mm	110VAC	Yes		
	GREY	0.75mm	24VAC	Yes		
	BLUE	0.5mm	24VDC	Yes		
	BLACK	2.5mm	400VAC	Yes		
			BUSBAR	No		
X	GREEN-YELLOW	2.5mm	EARTH	Yes		
			JUMPER	No		
X	BROWN	2.5mm	L1	Yes		
X	BLACK	2.5mm	L2	Yes		
X	GREY	2.5mm	L3	Yes		

Wire types by wire size/colour may look similar to:

Creat	e/Edit Wi	ге Туре						$\times$
[	Used	Wire Color	Size	Layer Name	Wire Numbering	USER1	USER2	^
13		BK	70mm <sup>2</sup>	BK_70mm <sup>2</sup>	Yes			
14		BK	95mm <sup>2</sup>	BK_95mm <sup>2</sup>	Yes			
15		BN	0.5mm <sup>2</sup>	BN_0.5mm <sup>2</sup>	Yes			-
$\sim$	$\sim$			Bar D. and			$\boxtimes$	$\sim$
			OK	Cancel	Help			

Create your new wire types defining *Wire Color, Size, Layer Name* & *Wire Numbering* as a minimum:

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- Highlighting the new wire type, select
  - Highlighting the new wire type, select
- Color... to change the graphical colour displayed inetype... to change the line type displayed
- Highlighting the new wire type, select Lineweight... to change the line weight displayed
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Select OK when finished

Right click over your current project in the Project Manager and select Properties

Select the Wire Numbers tab

Select Based on Wire Layer



The settings for wire types by function may be similar to:

Assign Wire Numbering Formats by Wire Layer X							
Wire Layer	Wire Number Format	Sequential start %N	Suffix List				
L1	%NL1	1					
L2	%NL2	1	-				
L3	%NL3	1	-				
EARTH	E	E	-				
Add Update Delete							
List L1 Wire layer name (wild cards OK)							
Default %NL1 Wire number format for layer							
Default Starting wire sequence (%N part) for this layer (Sequential tag mode only)							
Default Wire number suffix list for layer							
OK Cancel Help							

The settings for wire types by wire size / colour may be similar to:

Wire Layer	Wire Number For	mat Sequential start %N Suf	fix List	
3K_2.5mm <sup>2</sup>	%NL2	1		
3K_4.0mm <sup>2</sup>	%NL2	1	-	
3K_6.0mm <sup>2</sup>	%NL2	1	-	
3K_10mm <sup>2</sup>	%NL2	1	-	
3K_16mm <sup>2</sup>	%NL2	1	-	
3K_25mm <sup>2</sup>	%NL2	1	-	
3K_35mm <sup>2</sup>	%NL2	1	-	
3K_50mm <sup>2</sup>	%NL2	1	-	
sk_/umm*	/«INLZ	1	-	
	Ac	dd Update Delete		
List BK_2.5mm <sup>2</sup>	W (w	/ire layer name /ild cards OK)		
Default %NL2		Wire number format for layer		
Default 1	Starting wire seque for this layer (Sequ	ence (%N part) ential tag mode only)		
Default		Wire number suffix list for laye	r	

Select Add to add the wire numbering system

Repeat for the other wire types or sizes/colours with the numbering default set to %NL1, %NL2 and %NL3 respectively.

Select **OK** to accept any changes









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Back in the schematic, right click over the specific wire and select 🥻 Change/Convert Wire Type

Select the appropriate wire type i.e. L1, L2 or L3 or more specifically the exact wire size and colour

Select **OK** to accept any changes and the wire type will be changed until an equipotential change. Repeat for all remaining wires and their appropriate wire types.

If the wires were already numbered, the wires will be renumbered in accordance with the new standards as long as the previous wire numbers were not fixed.









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You can also use the <sup>#-O 31</sup>	<sup>vhase</sup> wire numb	ering comn	nand	
Select <i>Schematic</i> ribbon tal	o > Insert Wires,	/Wire Numl	bering panel > $^{N}$	₩ire umbers * ♥
Select # O 3 Phase				
	3 Phase Wire Numbering	9		×
	Prefix:	Base: 1 hold	Suffix: L1 O hold	Wire Numbers: 1L1 1L2 1L3
	) increment	<	increment List	
		Pick		Maximum: (a) 3 () 4 () None
			Help	
The command is not restric	ted to 3 or 4 wi	ires as vou d	can place unlimi	ted wire numbers. You

u can also select from a γc an p pre-defined List





