

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.

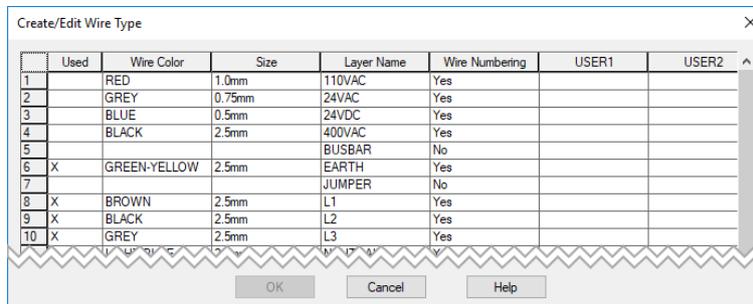
The key to any company standard is to define the standards in the title block template (*.DWT) as this will become available for all new drawings but you can also do this retrospectively within a current drawing and/or project.

To define the new wire types:

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

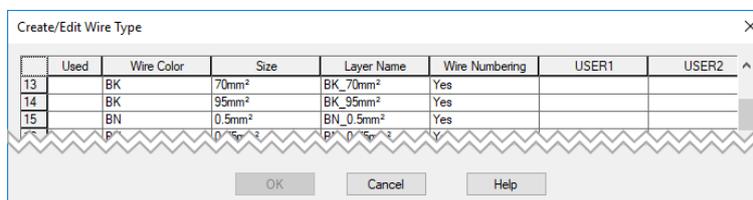
You can create wire types by function or by specific wire size/colour

Wire types by function may look similar to:



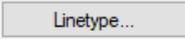
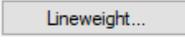
| Used | Wire Color | Size | Layer Name | Wire Numbering | USER1 | USER2 |
|------|------------|--------------|------------|----------------|-------|-------|
| 1 | RED | 1.0mm | 110VAC | Yes | | |
| 2 | GREY | 0.75mm | 24VAC | Yes | | |
| 3 | BLUE | 0.5mm | 24VDC | Yes | | |
| 4 | BLACK | 2.5mm | 400VAC | Yes | | |
| 5 | | | BUSBAR | No | | |
| 6 | X | GREEN-YELLOW | 2.5mm | EARTH | Yes | |
| 7 | | | JUMPER | No | | |
| 8 | X | BROWN | 2.5mm | L1 | Yes | |
| 9 | X | BLACK | 2.5mm | L2 | Yes | |
| 10 | X | GREY | 2.5mm | L3 | Yes | |

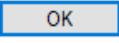
Wire types by wire size/colour may look similar to:



| Used | Wire Color | Size | Layer Name | Wire Numbering | USER1 | USER2 |
|------|------------|--------------------|-----------------------|----------------|-------|-------|
| 13 | BK | 70mm ² | BK_70mm ² | Yes | | |
| 14 | BK | 95mm ² | BK_95mm ² | Yes | | |
| 15 | BN | 0.5mm ² | BN_0.5mm ² | Yes | | |

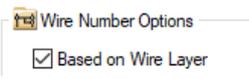
Create your new wire types defining *Wire Color*, *Size*, *Layer Name* & *Wire Numbering* as a minimum:

- Highlighting the new wire type, select  to change the graphical colour displayed
- Highlighting the new wire type, select  to change the line type displayed
- Highlighting the new wire type, select  to change the line weight displayed

Select  when finished

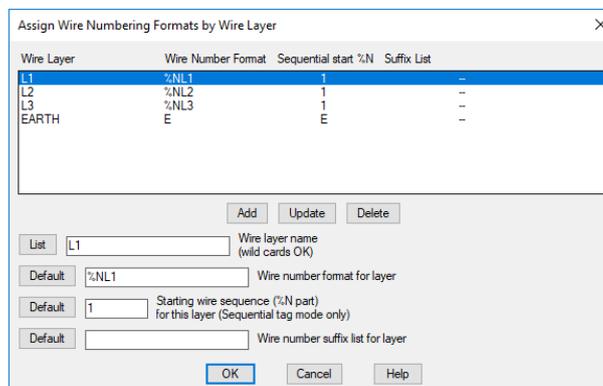
Right click over your current project in the *Project Manager* and select *Properties*

Select the *Wire Numbers* tab

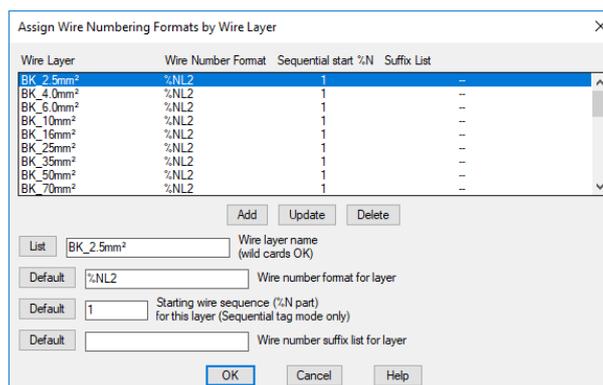
Select  **Wire Number Options**
 Based on Wire Layer

Select 

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



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



Select  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.

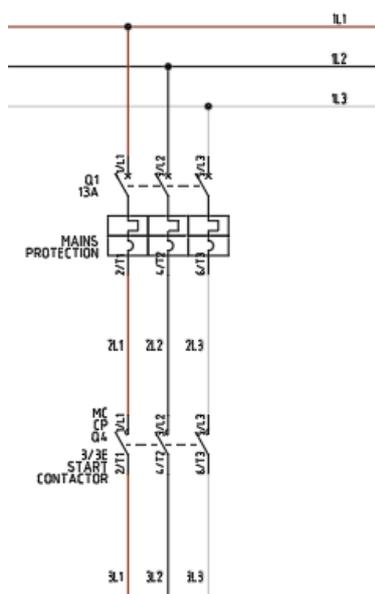
Select  to accept any changes

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 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.

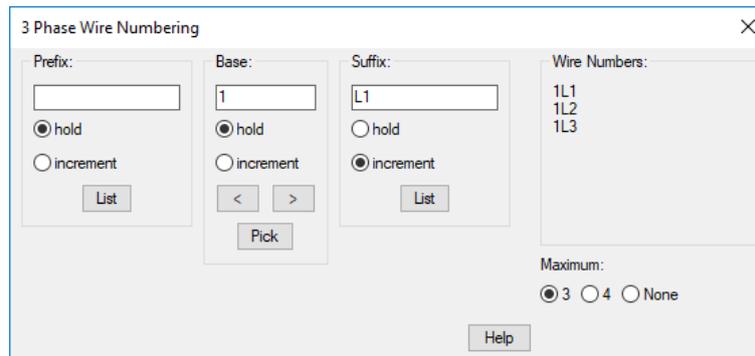
If the wires were already numbered, the wires will be renumbered in accordance with the new standards as long as the previous wire numbers were not fixed.



You can also use the  wire numbering command

Select *Schematic* ribbon tab > *Insert Wires/Wire Numbering* panel >  ↓

Select 



The command is not restricted to 3 or 4 wires as you can place unlimited wire numbers. You can also select from a pre-defined 

