

elecworks™ Tips & Tricks

PLC Management – Nodal/Address Numbering

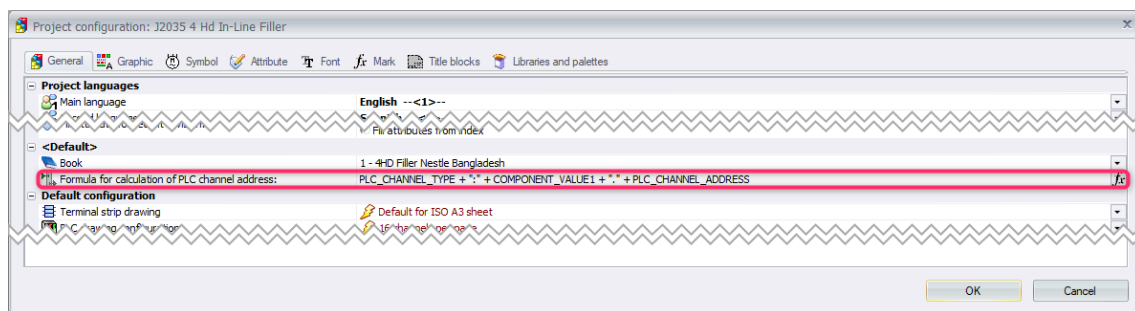
PLC's can be defined as a traditional rack/slot arrangement or a module based system. If a PLC rack is defined, then the number of slots is governed by the rack itself. If the PLC is a module based system, then the number of modules associated is governed by the user.

In both instances the order of the cards is at the users discretion and the numbering system adopted for the nodal or address based system is user definable.

The PLC nodal or address based numbering system can be defined in several places:

1. Project

Right click over the project > *Configurations* > *Project*



2. PLC manager


Select *Project* ribbon tab > *Management* pane >



Highlight the PLC module you wish to edit:

List of PLCs in current project

Mark	Location	Func...	Slot	Reference	Description (English)	Manufacturer	Configuration
J2035 4 Hd In-Line Filler							
016N01	MCP01 - MCP01...	F1		1756-PB72	8 - 32 VDC POWER SUPPL...	Rockwell Autom...	DefaultAutoma...
026N01	CP01 - CP01 Ma...	F1		1734-AENTR	1734 2-Port EtherNet/IP A...	Rockwell Autom...	<Default>
027N01	CP01 - CP01 Ma...	F1		1734-FPD	FIELD POTENTIAL DISTRIB...	Rockwell Autom...	<Default>
028N01	CP01 - CP01 Ma...	F1		1734-IB8S	8 Digital Safety Input 24 V...	Rockwell Autom...	<Default>
029N01	CP01 - CP01 Ma...	F1		1734-IB8S	8 Digital Safety Input 24 V...	Rockwell Autom...	<Default>
030N01	CP01 - CP01 Ma...	F1		1734-IB8S	8 Digital Safety Input 24 V...	Rockwell Autom...	<Default>
031N01	CP01 - CP01 Ma...	F1		1734-IB8	8 Digital Input 24 VDC PN...	Rockwell Autom...	<Default>

Select  Properties

Component properties : F1 CP01 026N01 028N01

Mark and data | Manufacturer part and circuits

Mode: Automatic

Manufacturer data

Card position: 1

Slot: IN

I index:

Q index:

AIW index:

AQW index:

Channel address formula: PLC_CHANNEL_ADDRESS

Description

Description (English):

Description (Spanish):

Description (Simplified Chinese):

Original mark

Unique mark.

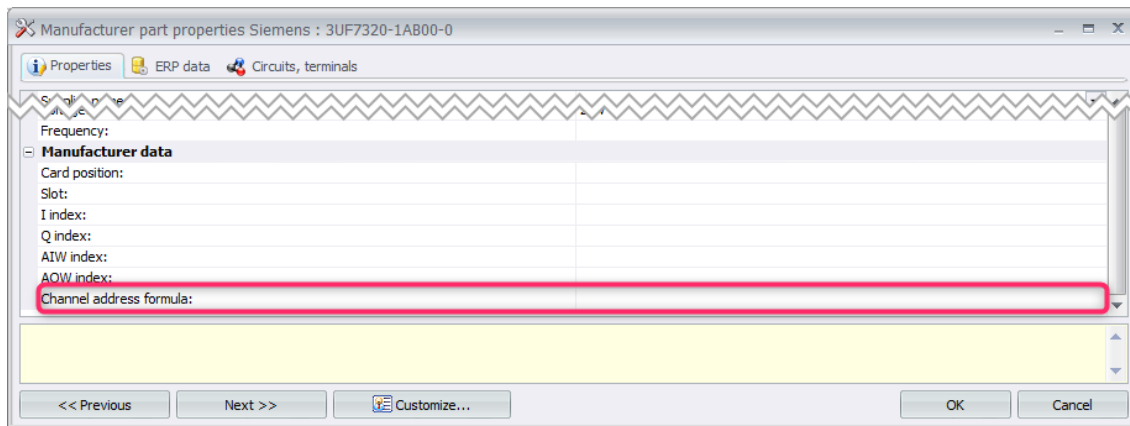
Buttons: Customize..., OK, Cancel

3. Manufacturer part manager

Select *Library* ribbon tab > *Manufacturers* pane > 

Highlight the PLC module you wish to edit.

Select  Properties



If the channel address formula is defined in the part, the PLC manager will default to the individual parts formula. If the user modifies the formula of the individual module in the PLC manager, then this is the formula elecworks™ will follow.

If the formula has not been defined in either the Manufacturer Part Manager or the PLC manager, then elecworks™ will assume the project configuration.

It is important to have the flexibility of the numbering system in order to configure a unique numbering system for a specific module/slot. Adaptors and distribution modules/slots as an example would not follow the same numbering system and indeed analogue may have a different system to digital.

The channel addresses are calculated automatically according to the configuration parameters.

I index, Q index, AIW index and AQW index are parameters that can be used in the PLC channel address formula, but by default they aren't.

The default formula without change is: `PLC_CHANNEL_TYPE + ":" + COMPONENT_VALUE1 + "." + PLC_CHANNEL_ADDRESS`

It is using the card position value, COMPONENT_VALUE1 in the formula.

There are example formulas and the variables available are as follows:

fx Formula manager: PLC channel address calculation

Predefined formulas Recent formulas Variables and simple formulas Functions

Simple formula	Description
PLC_CHANNEL_TYPE	Channel type
PLC_CARD_ADDRESS	Module address
PLC_CHANNEL_ADDRESS	Channel address
PLC_PHYSICAL_ADDRESS	Physical address
Manufacturer data	
COMPONENT_VALUE1	Manufacturer data 1
COMPONENT_VALUE2	Manufacturer data 2
COMPONENT_VALUE3	Manufacturer data 3
COMPONENT_VALUE4	Manufacturer data 4
COMPONENT_VALUE5	Manufacturer data 5
COMPONENT_VALUE6	Manufacturer data 6
COMPONENT_VALUE7	Manufacturer data 7

Manufacturer data	
Card position:	1
Slot:	1
I index:	
Q index:	
AIW index:	
AQW index:	
Channel address formula	

The I index value, as an example, could be used in the formula by including "Manufacturer data 3" field. This is certainly useful where the module numbers do not correlate to the card positions.

e.g.

I index: I2
 Formula: COMPONENT_VALUE3 + PLC_CHANNEL_ADDRESS
 Resultant address: I20, I21, I22, I23 etc