How to manage UL Power Supply for Lumberg Active Components

Carmine D'Errico - 2019-08-22 - How-to articles

Affected Modules	0980 ESL 390-1x1
Network type	Profinet
PLC	Siemens

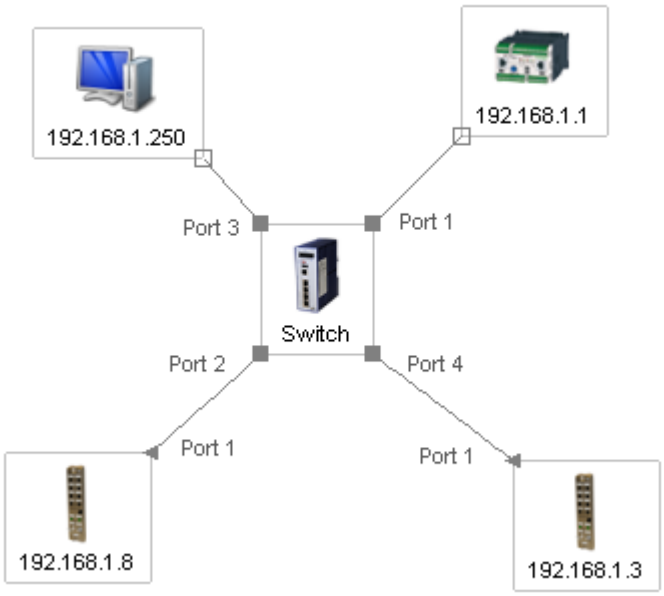
Problem Description

Current behaviour: After switching of the U_L power supply from the system chain, an error in the PLC-system status is received.

Expected behaviour: After switching off the U_L power supply from the system chain, *PLC "Diagnostic" error should not be displayed on the PLC error LED*

Configuration: Network Topology

Device Description	***IP Adress***
Laptop	192.168.1.250
Siemens PLC	192.168.1.1
Belden Industrial Switch	192.168.1.20
0980 ESL 700	192.168.1.8
0980 ESL 390-1x1	192.168.1.3



Please find in the following section the system setup from the Lion-P web page:

System

Connection Status		General Information	
Network		**System**	
Port 0	100 MBit/s FULL	Time Since Startup	10333 s
Port 1	No Link	System Message	OK
Phy MAC Address	3C:B9:A6:00:F5:3E	Restarts of IO-System	0
IP Address	192.168.1.3	**Firmware**	
Subnetmask	255.255.255.0	Name	Belden - PROFINET RT
Gateway	192.168.1.3	Version	V2.1.0.9-2.2 (F10017)
Profinet		Date	23.5.2018
State	Connected	**Device**	
Name of Station	digitalio1	Name	0980 ESL 390-121
		Ordering Number	934879007
		Hardware	V7.01
		Serial Number	00416
		Production Date	45 / 2018

Lion-M device:

Status

Ethernet Status

Port	Current Status
0	100 MBit/s FULL
1	No Link

MAC Address: 3C:B9:A6:00:08:5B

EIP Status

Assembly	Size	Direction
(none)	(none)	(none)
(none)	(none)	(none)

Current State: Connected

General Information

System	
Time Since Startup	10408 s
System Message	OK
Restarts of IO-System	0
Firmware	
Name	BELDEN - PROFINET RT
Version	V1.1.7.2
Date	7.9.2018
Device	
Article Number	000109628000401188
Production Week	13
Production Year	8

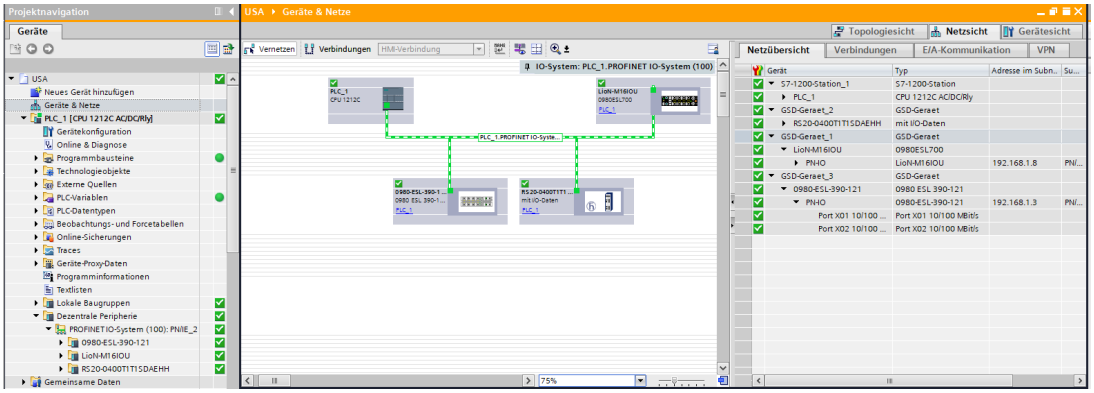
Project simulation in TIA portal

When you choose to deactivate the UL source, it will affect all actors in the downstream of the network.

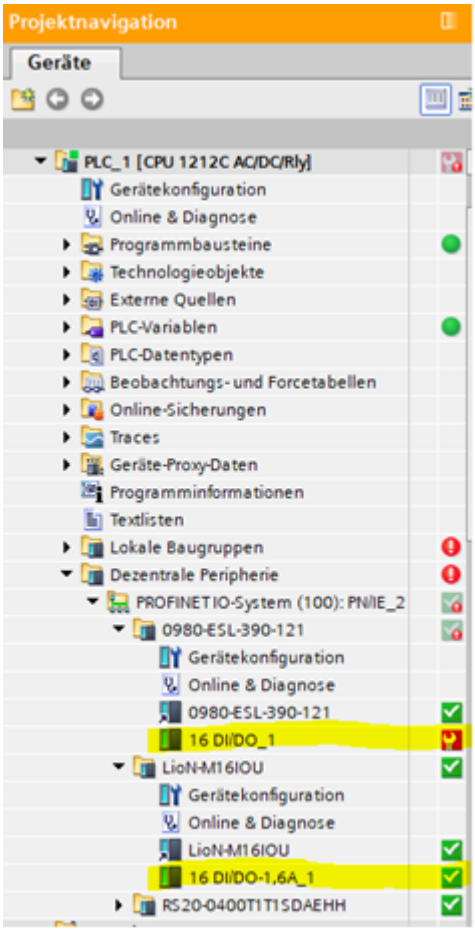
Therefore it is important to divide the sources of errors into two types: the error due to the absence of the UL source and the error due to the absence of the UL source at the

peripheral points of the automation infrastructure.

Here we build up a network with all the U_L power supply. NO ERROR APPEARS.



Now we switch off the UL Power Supply for both the modules

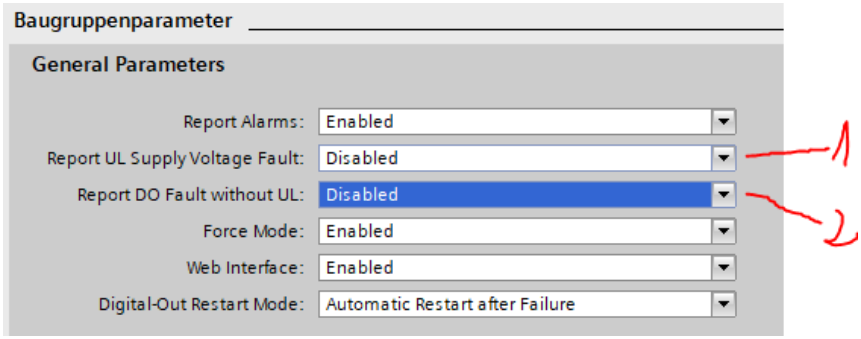


We notice that module 0980 ESL 390-1x1 shows an error. These are the reasons:

- The module provides an option to manage the error propagation for ***UL upstream power supply***
- The module provides the option to manage the propagation ***UL Power Supply error for downstream components***

Possible workaround description for 0980 ESL 390-1x1

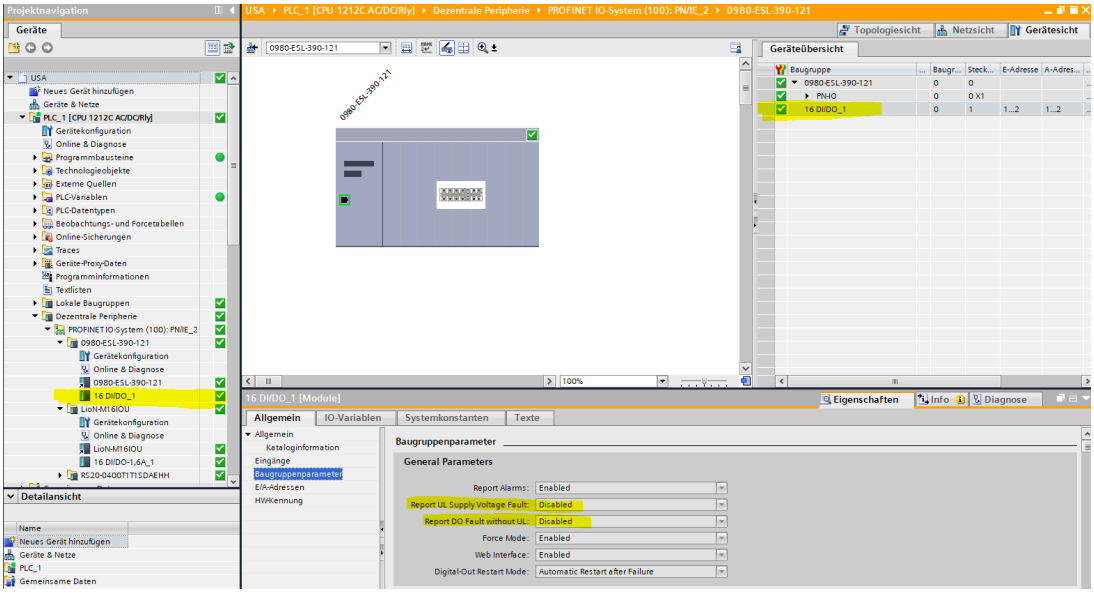
For this module, you have these two options which you can check:



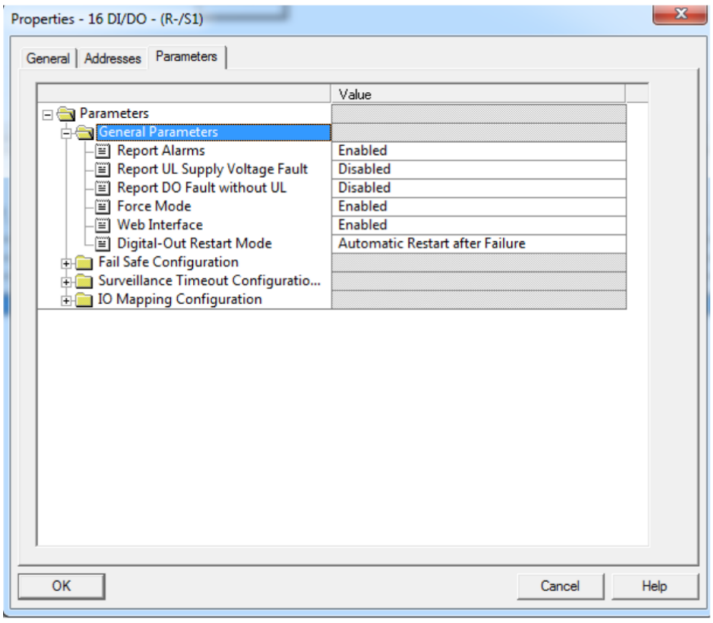
The option 1 deactivates the error propagation for UL Power Supply in upstream.

The option 2 deactivates the error propagation for UL Power Supply in the downstream

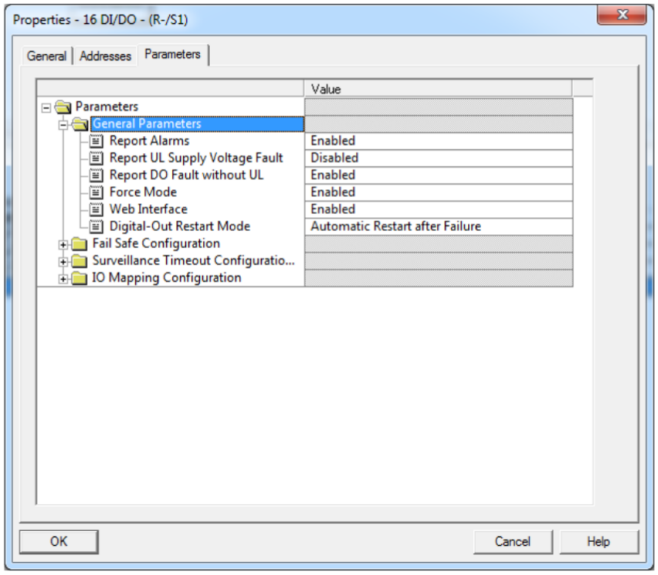
This could probably be a workaround for your problem.



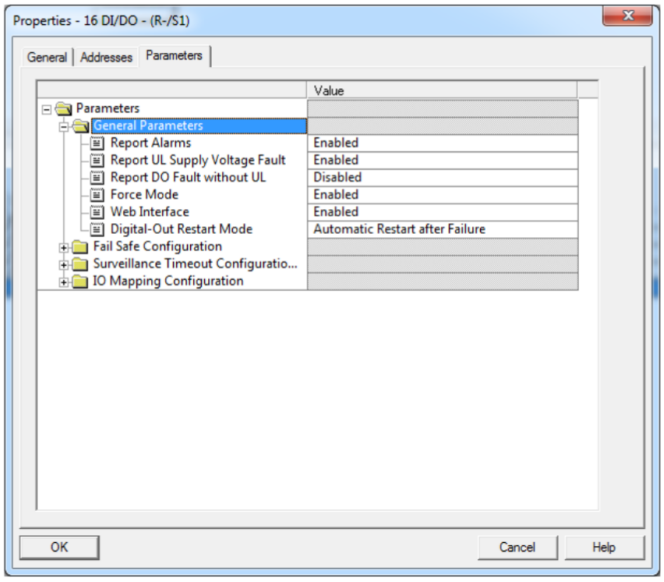
Other suggested setting configurations with relative tested behaviour



No Diagnosis without UL and activated Output



Diagnosis without UL only for activated Output



UL diagnosis when off or below 18V