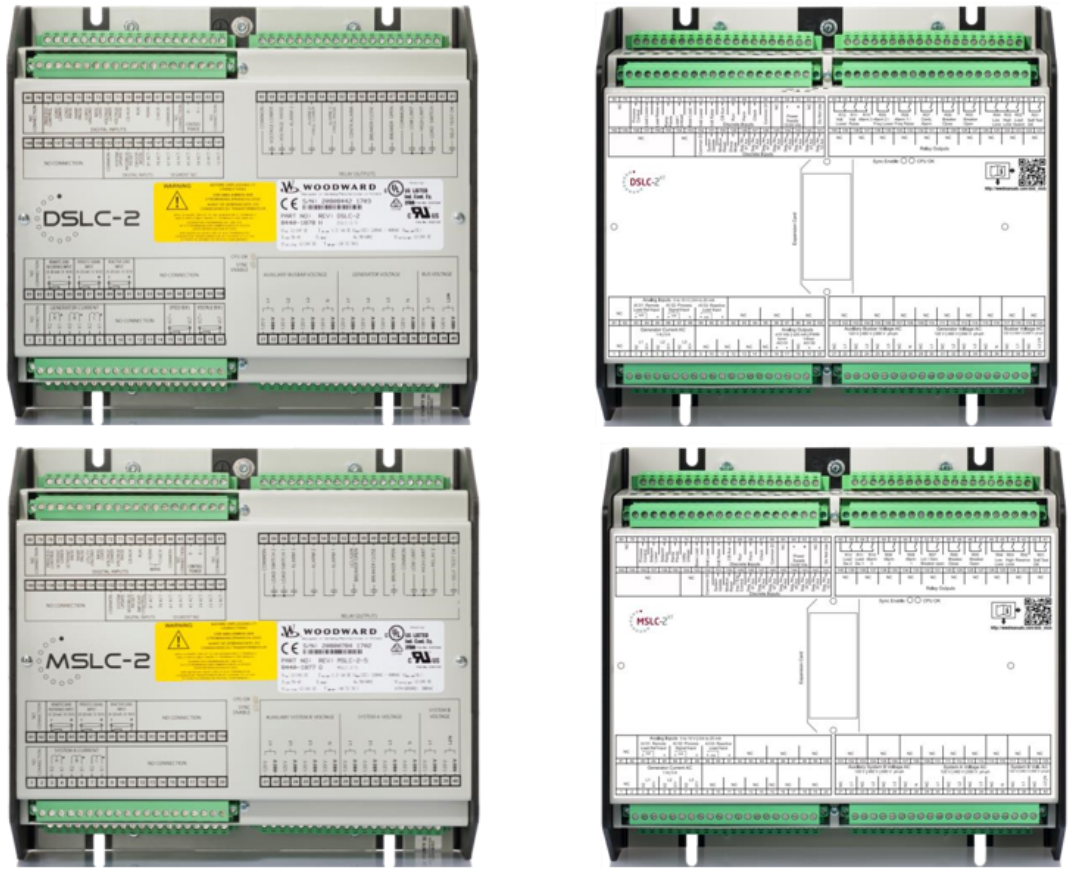
What are the differences between DSLC-2 MSLC-2 and DSLC-2XT MSLC-2XT ?

Clemens - 2024-01-16 - MSLC-2



*Not actual product picture, only a representation

Woodward understands the time-intensive nature of Power Generation projects. Ensuring the longevity of our products is one way we make our customers successful. Woodward has supplied and supported the field proven MSLC-2/DSLC-2 line of synchronizers and load controllers for over a decade. An upcoming state of the art Drop-In replacement successor extends the life cycle of this product line for another decade and

possibly beyond. This document provides an overview of what to expect from the successor products, namely MSLC-2XT/DSLC-2XT respectively.

Important Features:

→ Drop-In Replacement (Mounting dimensions and overall dimensions are same)

→ Similar Look and Feel as MSLC-2/DSLC-2 (available in back panel mounting style)

→ USB Connectivity to PC (RS-232 port is removed; new: USB Type B)

→ Direct connect up to 690VAC (increased range handled by device configuration)

→ Software selectable 1A/5A CT input (supported by one P/N)

Important Considerations:

1. **Communicating with legacy DSLC-2 (and MSLC-2)**

Woodward will provide update files for legacy DSLC-2 and MSLC-2 devices in the field if there is to run a mix of both DSLC-2/MSLC-2 generations. The legacy device will then send their UDP messages in a way that DSLC-2XT/MSLC-2XT can evaluate. It is mandatory to load this update file into the legacy devices for the system to run smoothly.

2. Using your existing settings file (*. WSET) from legacy DSLC-2 (and MSLC-2)

Woodward will provide a conversion rule for ToolKit to make the configuration transfer as smooth as possible. Some minor parameters will be shown in a log file, to be evaluated manually.

https://support.easygen.org/en/kb/articles/load-old-dslc-2-wset-file-into-dslc-2xt

3. The AC measurement of the DSLC-2XT (and MSLC-2XT)

The measurement hardware and software are different in comparison to the legacy devices. This is mainly due to higher accuracy, more flexible measurement range and fast response characteristics. The earthing of the DSLC-2XT/MSLC-2XT devices has become more important due to higher impedance of the measurement circuits.

4.ToolKit

To give you a seamless transition experience, the ToolKit layout (*. WTOOL file) is designed like the original devices. There are few less parameters due to new AC measurement and communication interfaces.

5.Documentation server

Product literature (manuals, config. files, software etc.) is hosted on a documentation server that is easily accessible by a QR code printed on the housing. Two additional QR stickers are delivered with the controllers to help you paste them at a location convenient to you. Subsequently, product CD is removed from scope of delivery. https://wss.woodward.com/manuals/PGC/DSLC_MSLC_series



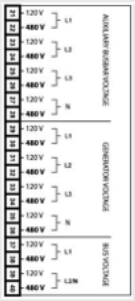
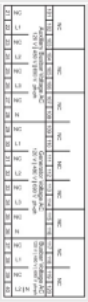
General:

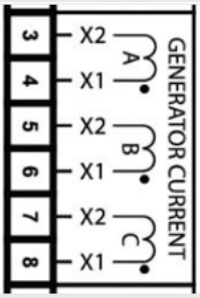
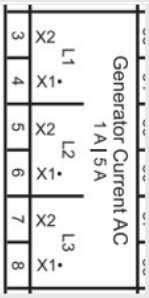
The DSLC-2XT/MSLC-2XT is an upward compatible successor device for the DSLC-2/MSLC-2. They are based on the easYgen-3400XT-P2 hardware. It is designed to function as good as the original DSLC2/MSLC-2 (version 1.1511). The new generation is equipped with a more powerful CPU, memory, and communication. It is more responsive in HMI and SCADA communications. The important control functions run on the same task rates that ensures the same control dynamic.

Most important, it is being designed to be able to run with the legacy DSLC-2/MSLC-2 system. This becomes more important than ever due to lack of obtainable components that may force us to make a hard stop to the DSLC-2/MSLC-2 product line later this year. If some minor rules are observed the DSLC-2XT can be mixed with already existing DSLC-2 / MSLC-2 in an application.

MSLC-2XT (in line with DSLC-2XT) is also in preparation and comes few months after DSLC-2XT.

AC Measurement:

	DSLC-2/MSLC-2	DSLC-2XT/MSLC-2XT	Comments
Voltage measurement	Rated: 120V | 480V	Rated: 120V | 480V | 690V	AC voltage measurement capability is expanded to 690 Vrated
Linear measuring range	Maximum: 150V | 600V	Maximum: 897V	Max. = 1.3x Vrated
Terminal diagram			Wiring difference, no separate terminals for 120 Vac input. 120V | 480V | 690V is handled by parametrization
Frequency	50/60Hz (40.0 to 85.0 Hz)	50/60Hz (30.0 to 85.0 Hz)	
Current measurement	1A or 5A, two separate hardware numbers	1A or 5A, same hardware	Simplifies inventory management

Linear measuring range	1.5 x Irated	3 x Irated	Realize enhanced protection schemes
Burden	< 0.15VA	< 0.10 VA	Grid code requirement
Terminal diagram			no separate part number for 1A and 5A CT inputs, handled by parametrization

I/Os:

	DSLC-2/MSLC-2	DSLC-2XT/MSLC-2XT	Comments
Discrete inputs			
Min. delay time	80ms	20ms	Helps to achieve < 100ms switchover
Analog inputs			
Resolution	11 Bit	14 Bit	
Accuracy	1%	0.5%	Better accuracy

Analog outputs			No AO in MSLC-2 or MSLC-2XT
AO#1	Freely scalable ±10 Vdc, ±20 mA, PWM	Freely scalable ±10 Vdc, ±20 mA, PWM Pre-configured to „11.03 Speed bias [%]“	Preferred for speed biasing
Resolution	Max. 12 Bit	Min. 12 Bit	
AO#2	Freely scalable ±10 Vdc, ±20 mA, PWM	Freely scalable ±10 Vdc, ±20 mA, PWM Pre-configured to „11.02 Voltage bias [%]“	Preferred for AVR biasing
Resolution	Max. 12 Bit	Min. 12 Bit	
Isolation	100 VAC	Basic isolation to PE: 500 VAC Reinforced isolation to PE: 300VAC	Enhanced isolation

Interfaces:

	DSLC-2/MSLC-2	DSLC-2XT/MSLC-2XT	Comments
Service Port	RS-232	USB	No extra/special cable required for programming
Ethernet	2	3	1 additional Ethernet connection (named Ethernet C) is provided

terminal deltas DSLC-2 / DSLC-2XT

https://wss.woodward.com/manuals/Legacy/DSLC%20%2B%20MSLC/DSLC-2%20MSLC-2/DSLC-2%20DSLC-2XT%20wiring%20differences.pdf

Others:

- The communication 9-pin D-sub connectors are replaced by phoenix plugs with screw terminals
- The analog outputs 1 & 2 are supported with two terminals now (the shunt for voltage output is internally populated)

Schedule:

- DSLC-2XT: Design release to production scheduled for Sept’22. Shipment expected Oct’22 however depends on availability of components. Limited early sample and draft manual available. Please contact your account manager.

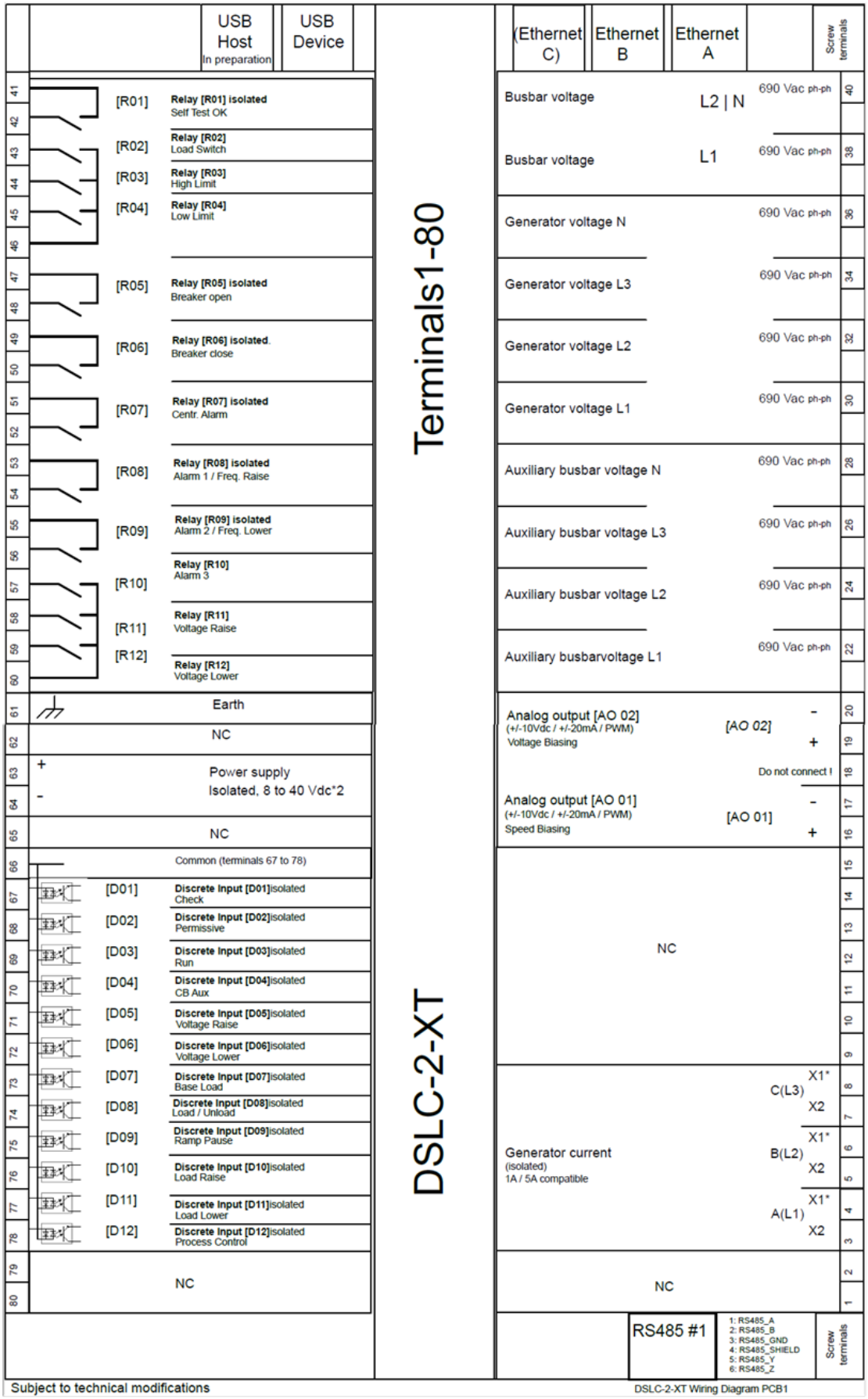
- MSLC-2XT: Design release to production scheduled for Nov’22. Shipment expected Dec’22 however depends on availability of components. Limited early sample and draft manual available. Please contact your account manager.

Part Numbers:

- 8440-2298: MSLC-2XT

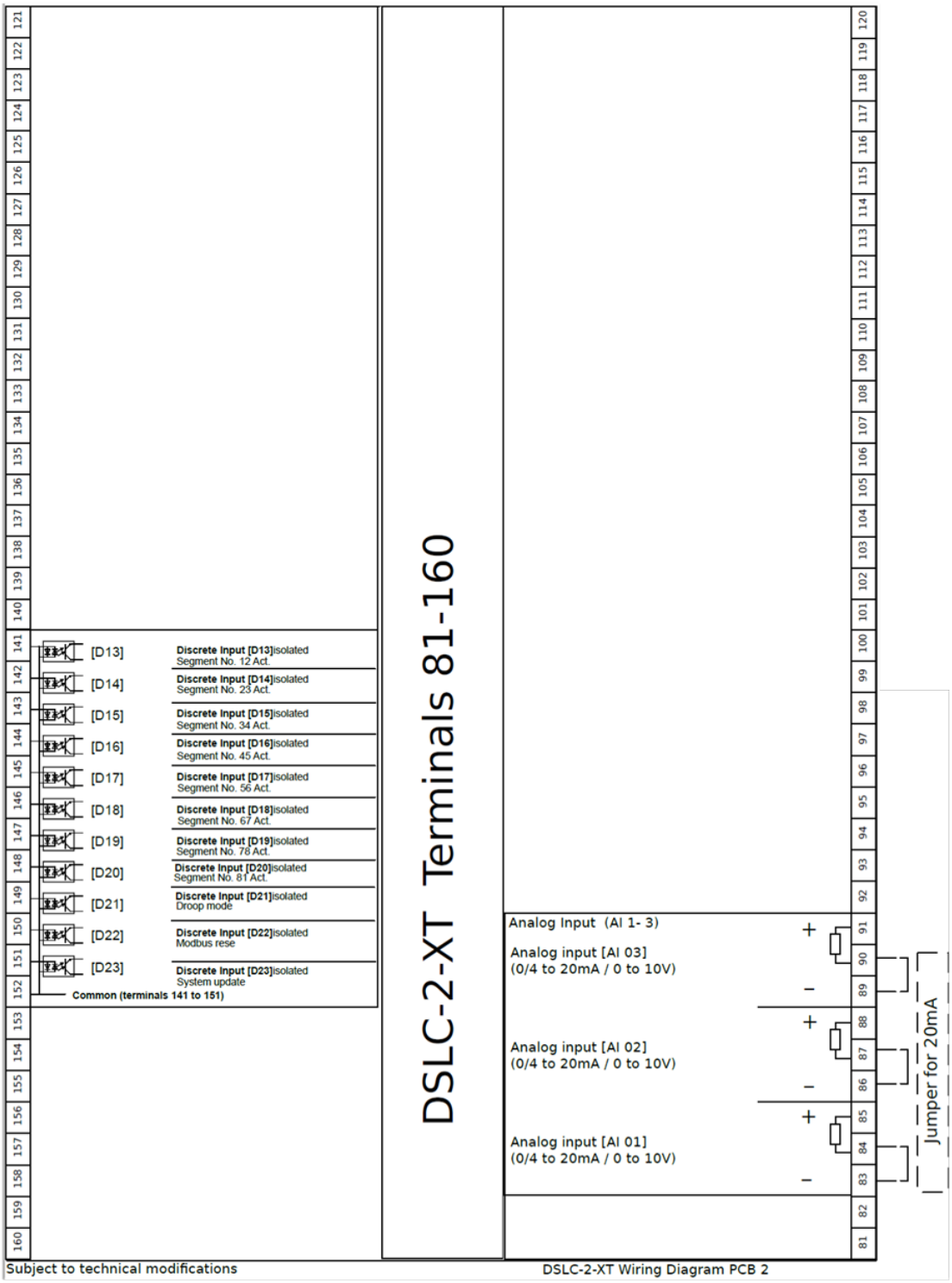
- 8440-2299: DSLC-2XT

Wiring diagram (DSLC-2XT)

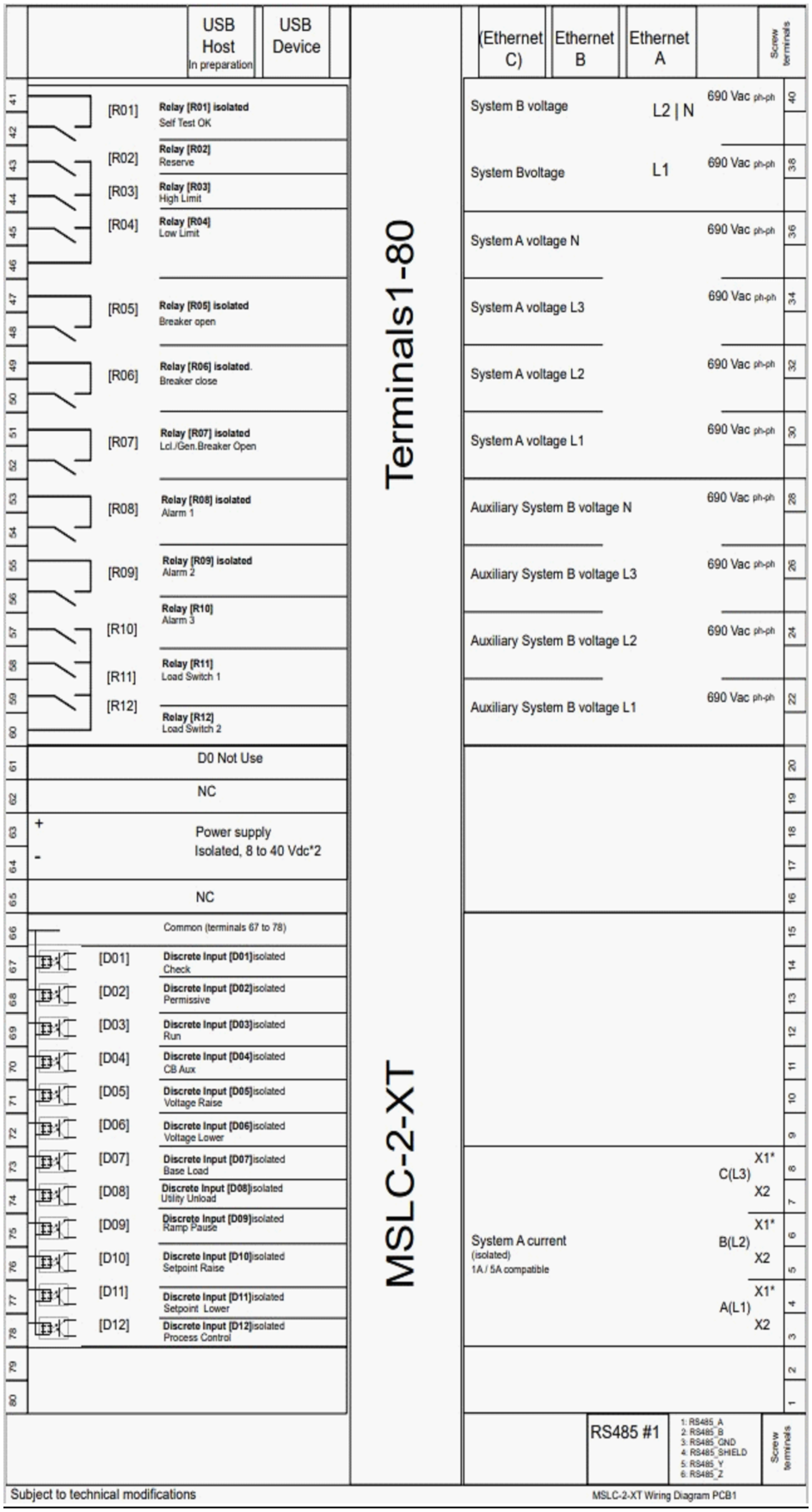


Subject to technical modifications

DSLC-2-XT Wiring Diagram PCB1



Wiring diagram (MSLC-2XT)



Subject to technical modifications

MSLC-2-XT Wiring Diagram PCB1

MSLC-2-XT Terminals 81-160
[D13]
Discrete Input [D13] isolated
Segment No. 12 Act.
[D14]
Discrete Input [D14] isolated
Segment No. 23 Act.
[D15]
Discrete Input [D15] isolated
Segment No. 34 Act.
[D16]
Discrete Input [D16] isolated
Segment No. 45 Act.
[D17]
Discrete Input [D17] isolated
Segment No. 56 Act.
[D18]
Discrete Input [D18] isolated
Segment No. 67 Act.
[D19]
Discrete Input [D19] isolated
Segment No. 78 Act.
[D20]
Discrete Input [D20] isolated
Segment No. 81 Act.
[D21]
Discrete Input [D21] isolated
Import/Export Control
[D22]
Discrete Input [D22] isolated
Modbus reset
[D23]
Discrete Input [D23] isolated
System update
Common (terminals 141 to 151)
Analog Input (AI 1- 3)
Analog input [AI 03]
(0/4 to 20mA / 0 to 10V)
Analog input [AI 02]
(0/4 to 20mA / 0 to 10V)
Analog input [AI 01]
(0/4 to 20mA / 0 to 10V)
Jumper for 20mA
Subject to technical modifications
MSLC-2-XT Wiring Diagram PCB 2