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Tmax Link Assembler Program

Program Overview

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Agenda

What is the Tmax Link Assembler Program?

Benefits

Equipment's features

How to get it

What is provided by ABB

Tmax Link Assembler Program

What is it?

Basic overview

- A process for Distribution Equipment Manufacturers (DEMs) to utilize ABB's UL listed design for switchboards (UL 891) and power panelboards (UL 67) under an Assembler Program.
- Allows DEMs to achieve a UL certification under their own brand name.
- The DEM will then be able to design and manufacture UL 891 switchboards and/or UL 67 power panelboards without the need of design and test.
- With Tmax Link, the manufacturer has the ownership of the supply chain to offer the shortest possible lead-times
- Tmax Link group mount design was tested based on UL 891 standard bus density (1000A per sq. in for copper bus & 750A/sq. in for aluminum bus).



Performance

UL interrupting ratings



A1



A2



XT1



XT2



XT3



XT4



XT5



XT6



XT7-XT7M

| | | | | | | | | | | |
|-----------------|-------------|-----|-----|----------|----------|----------|----------|---------|-----|----------|
| In | [A] | 100 | 250 | 15 - 125 | 10 - 125 | 60 - 225 | 25 - 250 | 400-600 | 800 | 800-1200 |
| 240 V AC | [kA] | 25 | 25 | 100 | 200 | 65 | 200 | 200 | 200 | 200 |
| 480 V AC | [kA] | - | - | 65 | 200 | 35 | 200 | 200 | 65 | 150 |
| 600 V AC | [kA] | - | - | 25 | 42 | 10 | 100 | 100 | 25 | 65 |

Tmax Link Assembler Program

Benefits

Commonalities

- Designed for **the Tmax XT and Formula** families of ABB circuit breakers
- **Easy to manufacture** mounting straps (no castings, special molded components or special processes are required).
- **Universal strap kits** for both switchboards and panelboards
- Commonly available standoff insulators
- No limitation in the use of **100% rated** breakers
- Possibility to install a **communication** network down to branch level

Panelboard

- 1.375" hole spacing design for vertical bus
- Main vertical breaker from 250 A to 1200 A
- 3 phase, 3 wire
- 3 phase, 4 wire (100% rated neutral)

Switchboard

- 1.25" and 1.375" hole spacing designs for vertical bus
- 3phase 3 wires construction

Tmax Link Assembler Program

Equipment's features

Withstand and sc ratings

- The Tmax Link bus bracing design has a standard short circuit withstand rating of **65kA RMS at 240VAC, 480VAC, and 600VAC**

| Rated voltage (+/-10%): | S.C. | 240VAC | 480VAC | 600VAC |
|--|-------|--------|--------|--------|
| | 65kA | MLO | MLO | MLO |
| Maximum short circuit ratings: MLO = main lugs only MCB = main circuit breaker | 100kA | MCB | MCB | MCB |
| Rated frequency (+/- 2%): 50/60Hz | 150kA | MCB | MCB | - |
| | 200kA | MCB | MCB | - |

Enclosure details

- ABB has established the **minimum widths** to be used in the Tmax Link design based on **UL wire bending space** requirements and **arcing distance** test results.

| Mounting configuration | Breaker frame | Width |
|------------------------|---------------|-------------|
| Dual | 100A-250A | 28" / 711mm |
| Single | 250A-800A | 28" / 711mm |
| Single | 1000A - 1200A | 32" / 812mm |

Tmax Link Assembler Program

Equipment's features

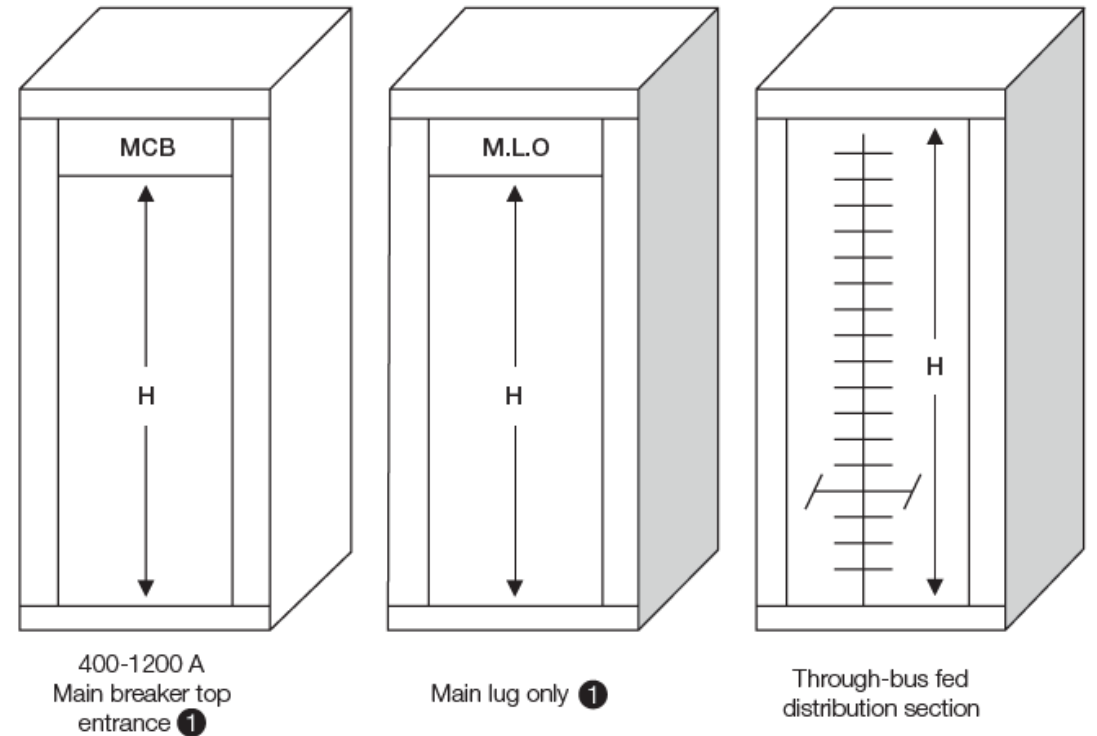
Switchboard layout

The height and depth of the enclosure is to be determined by the manufacturer and the application the switchboard will operate in:

- Interior height is **68.75" / 1,746mm**

Depending on supply conditions :

- An integral (chassis mounted) main circuit breaker with group mounted feeder circuit breakers in one structure
- A main lug only supply connection with group mounted feeder circuit breakers
- A through-bus (horizontal/main bus) fed chassis with group mounted feeder circuit breakers



① Unit may be inverted for bottom-feed applications

Tmax Link Assembler Program

Equipment's features

Panelboard layout

- An integral (vertical or horizontal mounted) main circuit breaker with group mounted branch circuit breakers
- A main lug only (MLO) supply connection with group mounted branch circuit breakers
- Equipped with feed through or sub-feed lugs
- $X = 1.375" / 35\text{mm}$

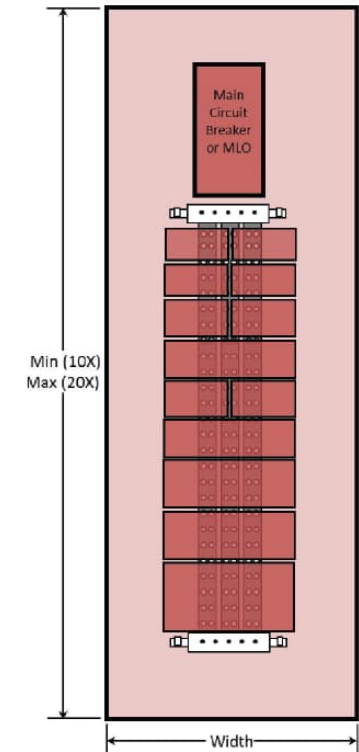
| Vertical bus rating [A] | Tmax XT | | 10X | 20X |
|-------------------------|---------|-------|--------|--------|
| 400A | XT4 | 250A | 34.25" | 48.00" |
| 400A | XT5 | 400A | 34.25" | 48.00" |
| 600A | XT6 | 600A | 39.50" | 53.25" |
| 800A | XT6 | 800A | 43.25" | 57.00" |
| 1200A | XT7 | 1200A | 48.00" | 61.75" |

Inches

| | 10X | 20X |
|-----|--------|--------|
| Min | 34.25" | 48.00" |
| Max | 48.00" | 61.75" |

Millimeters

| | 10X | 20X |
|-----|--------|--------|
| Min | 870mm | 1220mm |
| Max | 1220mm | 1570mm |



Tmax Link Assembler Program

How to get it ?

Requirements

- Submit a request for quote to Underwriters Laboratories LLC under their existing MyHome page:
<https://www.ul.com/customer-resources/request-for-quote>
- Enter requestor's contact information
- In product description request either the UL 891 Switchboard assembler program referencing File Number E466042 or UL 67 power panelboard File Number: E475757
- Attach any document with your request; such as a list of control components that will be used within your equipment.
- Submit Request
- Allow for 2-3 days for quotation from UL

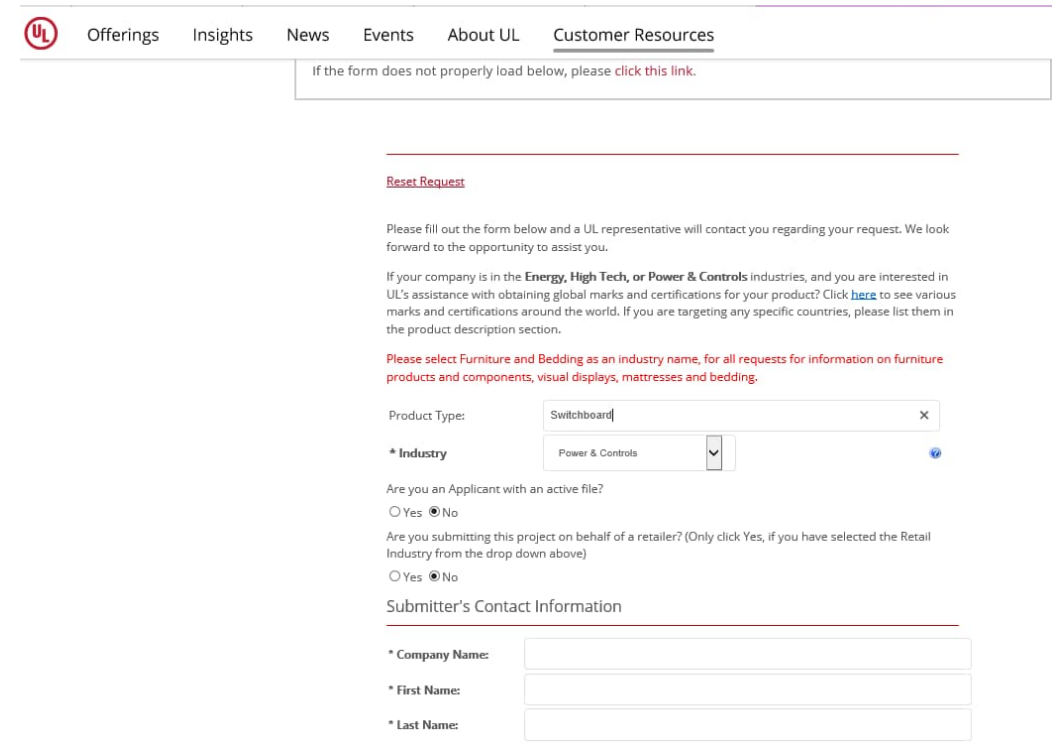
The screenshot shows the UL website's 'Customer Resources' section. At the top, there is a navigation bar with the UL logo and links for Offerings, Insights, News, Events, About UL, and Customer Resources. Below the navigation bar, a message states: 'If the form does not properly load below, please click this link.' The main content area features a 'Reset Request' link. Below this, there is a paragraph explaining that a UL representative will contact the user regarding their request. Another paragraph states that if the user's company is in the Energy, High Tech, or Power & Controls industries, they can click a link to see various marks and certifications. A red note specifies that Furniture and Bedding should be selected as the industry name for requests for information on furniture products and components, visual displays, mattresses and bedding. The form includes a 'Product Type' dropdown menu with 'Switchboard' selected, and an '* Industry' dropdown menu with 'Power & Controls' selected. There are two radio button questions: 'Are you an Applicant with an active file?' (No selected) and 'Are you submitting this project on behalf of a retailer?' (No selected). At the bottom, there is a section for 'Submitter's Contact Information' with three input fields for '* Company Name', '* First Name', and '* Last Name'.

Tmax Link Assembler Program

How to get it ?

Additional requirements

- Complete global service agreement with UL
- Estimated costs are based on the assumption that the applicant already has an active UL 891 file and are in good standing with UL. Estimated cost: \$2000.00.
- Regular UL File maintenance and inspections (follow up services) is to be completed by customer.



The screenshot shows the UL Customer Resources page. The navigation bar includes links for Offerings, Insights, News, Events, About UL, and Customer Resources. A message states: "If the form does not properly load below, please [click this link](#)." Below this is a "Reset Request" link. The main text reads: "Please fill out the form below and a UL representative will contact you regarding your request. We look forward to the opportunity to assist you." It then specifies: "If your company is in the **Energy, High Tech, or Power & Controls** industries, and you are interested in UL's assistance with obtaining global marks and certifications for your product? Click [here](#) to see various marks and certifications around the world. If you are targeting any specific countries, please list them in the product description section." A red note says: "Please select Furniture and Bedding as an industry name, for all requests for information on furniture products and components, visual displays, mattresses and bedding." The form fields are: "Product Type:" with a dropdown menu showing "Switchboard"; "* Industry:" with a dropdown menu showing "Power & Controls"; "Are you an Applicant with an active file?" with radio buttons for Yes and No (No is selected); "Are you submitting this project on behalf of a retailer? (Only click Yes, if you have selected the Retail Industry from the drop down above)" with radio buttons for Yes and No (No is selected); and "Submitter's Contact Information" with three input fields for "* Company Name:", "* First Name:", and "* Last Name:".

Tmax Link Assembler Program

What is provided by ABB?

Deliverables

- Once approved by ABB R&D and UL ABB will provide the following:
 - Drawing package for the 1.375” hole space design + 1.25” hole spacing design for Group Mounted Section
 - Enclosure reference drawing
 - Interior reference drawing
 - Strap kit designs for Tmax XT (XT1 – XT4 / 125 – 250A) Tmax XT5 – XT7 (300 – 1200), and Formula (A1 and A2) including circuit breaker front covers
 - PDF, .dwg and .stp formats
 - Bill of material list
 - Installation guide

Tmax Link Assembler Program

What is provided by ABB?

Deliverables

Strap kits for group mounted sections

| ITEM NO. | QTY | PART NO. | DESCRIPTION | LAMIN. ONE | LAMIN. TWO | LAMIN. THREE |
|----------|-----|-----------------|---|------------|------------|-----------------|
| 1 | 10 | 1900803_0500 | SCREW, TAP/TITE, HEX 1/4-20 X .500 | REQ. | | |
| 2 | 6 | 1900803_0750 | SCREW, TAP/TITE, HEX 1/4-20 X 0.750 | | REQ. | |
| 3 | 6 | 1900803_1000 | SCREW, TAP/TITE, HEX 1/4-20 X 1.000 | | | REQ. |
| 4 | 2 | D_2222_5000-171 | XT1 3 POLE FIXED MT W/UL INSUL. | | | NOT PART OF KIT |
| 5 | 1 | D_2211_0000-125 | TMAX LINK DUAL XT1A/XT2 BRKR PANEL 1.375 DESIGN | | | |
| 6 | 2 | D_2211_0000-184 | TMAX LINK DUAL XT1 BRKR SPRT BRKT 1.375 DESIGN | | | |
| 7 | 1 | D_2222_1000-197 | TMAX LINK DUAL XT1 STRAP 2 PHASE B 1.375 DESIGN | | | |
| 8 | 1 | D_2222_1000-186 | TMAX LINK DUAL XT1 STRAP 3 PHASE B 1.375 DESIGN | | | |
| 9 | 2 | D_2222_1000-199 | TMAX LINK DUAL XT1 STRAP 1 PHASE ABC 1.375 DESIGN | | | |
| 10 | 2 | D_2222_1000-200 | TMAX LINK DUAL XT1 STRAP 4 PHASE ABC 1.375 DESIGN | | | |

NOTE 1: MOUNTING AND BUS CONNECTION HARDWARE AND INSULATOR SUPPLIED WITH BREAKER

NOTE 2: ITEM 7 IS PLACED UNDER ITEM 8.

| PROJECTION | DRAWING NUMBER | REV | TITLE | CUSTOMER |
|------------|-----------------|-----|--|----------|
| | D_2222_5000-030 | C | TMAX LINK DUAL XT1 ASSEMBLY 1.375 DESIGN | |
| | | B | DRAWING NUMBER | |
| | | | D_2222_5000-030 | |

Group mount enclosure and interior (reference only)

32 INCH AND 38 INCH ENCLOSURES WITH INTERIOR

TOP: 32,000 (32 inch), 24,000 (38 inch)

FRONT: 32,000 (32 inch), 38,000 (38 inch)

ISOMETRIC: 32 IN WIDE, 38 INCH WIDE

NOTES:
 1. FINISH IS SPECIFIED ON THE INDIVIDUAL PART DRAWINGS. (DEFAULT PAINTED SURFACES WILL BE ANSI 61 GRAY, POWDER, SMOOTH, SEMI-GLOSSY.)
 2. MATERIAL IS SPECIFIED ON THE INDIVIDUAL PART DRAWINGS.

| REV | DESCRIPTION | DATE | BY | CHKD | APP'D |
|-----|------------------------|------------|----|------|-------|
| 1 | ISSUED FOR MANUFACTURE | 08/20/2024 | | | |
| 2 | REVISION | | | | |
| 3 | REVISION | | | | |
| 4 | REVISION | | | | |
| 5 | REVISION | | | | |
| 6 | REVISION | | | | |
| 7 | REVISION | | | | |
| 8 | REVISION | | | | |
| 9 | REVISION | | | | |
| 10 | REVISION | | | | |



ABB