Unit Substation - Specifications

Dimensions
Height: 62.80" - 68.80" (1,595.12 mm - 1,747.52 mm)
Width: 50.76" - 71.50" (1,289.30 mm - 1,816.10 mm)
Depth: 36.00" (914.40 mm)

Approximate Weight: 775 lbs. - 2,800 lbs. (354.3 kg - 1,280.0 kg)

UL File No. E229729-1-1

General Specifications for Unit Substations

All Substations Must Meet the Following:
Part I. General:
1.1 General Requirements:
A. Shall be tested and certified to be in compliance with UL 1062 entitled “Unit Substations”
B. Shall be certified to be in compliance with UL 1561 entitled “Dry Type General Purpose and Power Transformers”
C. Shall be certified to be in compliance with UL 67 entitled “Panelboards”
D. Shall be certified to be in compliance with UL 489 entitled “Molded Case Circuit Breakers”
   Shall be certified to be in compliance with UL 50 entitled “Cabinets and Boxes”
E. Shall be certified to meet all sections NFPA 303 DTD “2006 Marinas and Boatyards”
F. Overload capacity shall meet ANSI L57.96-01.250.

Part II. Products:
2.1 Distribution Equipment:
A. Dock Boxes Unlimited, Inc.
   1-800-559-4269
   www.dockboxes.com

2.2 Unit Substations - General Specification
A. Main Housing:
   a. The housing shall be constructed of 14 or 16 gauge, 316L low carbon stainless steel and shall be coated with UV-resistant polyurethane resin over a powder coating. It shall be UL listed as a type 3R weatherproof enclosure.
   b. The housing shall have a solar shield top to reduce heat transfer from the sun and to reduce the heat transfer from the transformer.
   c. Long-life thermostatically controlled fans shall be located such that the fans move air from the transformer compartment.
B. Doors:
   a. Stainless steel access doors to the transformer and panelboard compartments shall use key-entry, quarter turn, wing-nut handles.
   b. The doors shall be sealed by 360° neoprene gaskets and be watertight.

C. Transformer:
   a. Transformers shall be wound with class H heavily insulated copper bar and double dipped in tough insulating varnish that protects the copper.
   b. The temperature rise of the transformer shall not exceed 150°C.
   c. The insulation class for the transformer shall not exceed 220°C per UL standards.
   d. Standard frequency shall be designed for 60-Hertz operation. 50-Hertz operation is available upon request.
   e. Standard taps shall be FCAN (+2) and FCBN (-2) at 2.5% each. Custom taps are available upon request.
   f. Standard primary voltages shall be:
      1. 480V, 3-phase, Delta
      2. 480V, 1-phase
      3. 600V, 3-phase, Delta
      4. 600V, 1-phase
      5. Other voltages available upon request
   g. Standard secondary voltages shall be:
      1. 120/208V, 3-phase, Wye
      2. 127/220V, 3-phase, Wye
      3. 277/480V, 3-phase, Wye
      4. 120/240V, 1-phase
      5. Other voltages available upon request
   h. Standard primary circuit breaker protection shall be provided for incoming electrical feeds. Primary circuit protection may be removed where acceptable per the NEC upon request.

D. Panelboard:
   a. Panelboard shall be Cutler-Hammer Pow-R-Line.
   b. All bus work shall be density rated copper.
   c. All circuit breakers shall be bolt-on type.
   d. Panelboard shall be provided with a main circuit breaker or main lug only.
   e. Branch circuit breakers shall be provided per the customer's specifications.

E. Internal Wiring:
   a. All secondary wire shall be completed with 600 V insulated copper wire.
   b. This wire shall pass through a special molded grommet assembly between the transformer and the distribution panel chambers.
F. **Grounding:**
   a. All exposed metallic parts must have an integral ground that is a part of the equipment grounding system.

G. **Electrical Components:**
   a. All electrical components shall be located at least 12" above the mounting surface.

H. **Installation Equipment:**
   a. Two heavy-duty stainless steel "C" channels shall be provided for easy mounting of the unit to the dock.
   b. Removable louvered skirting shall be provided to cover the mounting area.
   c. Cable gland plates shall be provided on both the primary and secondary side of the unit base.
   d. Four Lifting eyes shall be provided with each unit, located on the top of the unit. These eye-bolts shall be stainless steel and can be found under the solar shield.

I. **Optional Ground Fault Monitoring:**
   a. Monitoring can be single-level (monitoring for a single main circuit breaker) or multi-level (monitoring for multiple branch circuits).
   b. Indicator lights shall be visible on the outside of the substation enclosure when ground fault monitors are included.

J. **Optional Lighting Equipment:**
   a. Photocell for external lighting equipment
   b. Lighting contactors
   c. Three Position Hand-Off-Auto Control

(END OF SECTION)
Product Features

HANDLE MECHANISM FOR PRIMARY CIRCUIT BREAKER

LOCKABLE TRANSFORMER ACCESS DOOR

REMOVABLE SOLAR SHIELD

GROUND FAULT MONITOR

8" C-CHANNEL BEHIND REMOVABLE LOUVERED ACCESS PLATES

316 STAINLESS STEEL HOUSING WITH POLYESTER POWDER-COATED FINISH

REMOVABLE LOUVERED ACCESS PANEL

FRONT - TRANSFORMER DOOR CLOSED

SIDE - PANEL DOOR CLOSED
Product Features (cont.)

- Copper wound, high efficiency transformer
- Temperature controlled cooling fans
- Fine-stranded, 600V copper wire
- Main circuit breaker
- Gasketed access doors
- Branch circuit breakers
- Optional surge protection device
Product Dimensions - Standard Single Panel Substation - 250KVA Transformer or Below

Base Dimensions - Standard Single Panel Substation - 250KVA Transformer or Below
Product Dimensions - Standard Single Panel Substation - Above 250KVA Transformer

Front:
- Dimensions: 50.76" x 68.0" x 68.80"

Side:
- Dimensions: 36.00" x 50.76" x 68.80"

Base Dimensions - Standard Single Panel Substation - Above 250KVA Transformer

- 8" C-Channel Width: 48.85"
- Isolation Wall for Transformer and Panel: 33.70"
- Access Opening for Secondary Cables: 29.00" x 4.00"
- Access Opening for Primary Cables: 18.00" x 4.00"
Unit Substation - Specifications

Product Dimensions - Side-By-Side Single Panel Substation - 250KVA Transformer or Below

Base Dimensions - Side-By-Side Single Panel Substation - 250KVA Transformer or Below
Unit Substation - Specifications

Product Dimensions - Side-By-Side Single Panel Substation - Above 250KVA Transformer

- **Front**
  - Height: 68.00"
  - Width: 71.50"

- **Side**
  - Height: 68.00"
  - Depth: 36.00"

Base Dimensions - Side-By-Side Single Panel Substation - Above 250KVA Transformer

- **8" C-CHANNEL**
- **Isolation Wall for Transformer and Panel**
- **Access Opening for Secondary Cables**
  - Size: 29.00" x 4.00"
- **Access Opening for Primary Cables**
  - Size: 18.00" x 4.00"

Dimensions:
- **Length**: 69.60"
- **Height**: 33.70"
- **R0.36"**