

**Power Frame Type
Closed Transition**

Power Series Transfer Switch

1600-5000 Amps



Automatic Transfer Switch
1600 – 5000A, up to 600VAC, 50/60 Hz
3 or 4 poles
NEMA 1 or 3R
Closed Transition
UL1008 Listed
CSA C22.2 No. 178 Certified

CODES AND STANDARDS:



UL1008 Listed



NFPA 70, 99, 110, 37



NEC 700, 701, 702, 708



ISO9001, 8528, 3046, 7637, Pluses #2b, 4



NEMA ICS10, MG1, 250, ICS6, AB1



ANSI C62.41



Seismic: IBC 2009, CBC 2010, IBC 2012, ASCE 7-05, ASCE 7-10, ICC-ES AC-156 (2012)



IEC 61000 EMC Testing & Measuring



CSA C22.2 No. 178 Certified

DESCRIPTION:

The Power Frame Type Transfer Switch has exceptional 3 cycle withstand and close on ratings along with high speed switching time of < 3 cycles to minimize the effect of power disturbances. The switching mechanism is enabled for safe manual transfer under load. With a fully rated 4th pole operating on a common crossbar, the Power Frame switch eliminates the typical problems with a 3 pole overlapping neutral design. With integral contact wear indication, preventative maintenance can be scheduled when convenient for the user ensuring maximum uptime. System parameters can be uploaded with a USB drive in moments, minimizing installation time.

The control's color display and mimic bus diagrams simplifies programming, routine operation, data presentation, and setting adjustments. The intuitive, grouped data screens along with the supervisory and highly customizable data acquisition allow the user to customize to their needs. Standard features include Modbus® RTU, extensive user customizable input/ outputs, 450 event log with event capture for the most recent 12, with 3 phase sensing on both sources, plus load for voltage, frequency, sequencing, loss, and unbalance.

An automatic closed transition transfer switch (make-before-break) requires the normal and emergency sources to be synchronized. The controller monitors the voltage and frequency of both power sources with an anticipatory algorithm; phase angles must be within 8 electrical degrees. A synchronization timer is initiated (TSCT, 1-60 min adjustable) to complete the transfer and parallels 100ms or less. If the TSCT times out and the transfer switch has not reached synchronization, the transfer switch will remain connected to the current Source, and a failure to transfer alarm will be displayed. The switch can also be configured to operate in open transition mode if there is a fail to transfer in closed transition.

Power Series, Power Frame Type, Closed Transition

STANDARD FEATURES:

- High Withstand and Close on Ratings
- Safe manual transfer under load
- Front Access
- Cable or bus entry is Top, Bottom or Both
- Isolated Compartments for improved safety
- 4.3 inch Color Display
- Mimic diagram with Source Available and Connected LED indication
- Event logging and recording 450 time-stamped events
- System TEST pushbutton
- Programmable plant exerciser
- Field-selectable multi-tap transformer panel permits operation on a wide range of system voltages
- Modbus® RTU

VOLTAGE AND FREQUENCY SENSING:

- 3-Phase under and over voltage sensing on normal and emergency sources
- 3-Phase under and over voltage sensing on load
- Under and over frequency sensing on normal and emergency
- Selectable settings: single or three phase voltage sensing on normal, emergency and load 50 or 60Hz
- Phase sequence sensing for phase sensitive loads

CONTACTS:

- Source available:
 - Source-1 Present, 2-N.O. & 2 N.C.
 - Source-2 Present, 2-N.O. & 2 N.C.
- Switch position:
 - Source-1 Position, 1-N.O. & 1-N.C.
 - Source-2 Position, 1-N.O. & 1-N.C.
- Pre Transfer Contacts: 1-N.O. & 1-N.C.

Standard Control Parameters Available

CONTROL INPUTS (4 STANDARD):

- Monitor Mode
- Bypass Timers
- Lockout
- Manual Retransfer On/Off
- Manual Retransfer
- Slave In
- Remote Engine Test
- Preferred Source Selection
- Go to Emergency
- Emergency Inhibit
- Go to Neutral

CONTROL OUTPUTS (4 STANDARD):

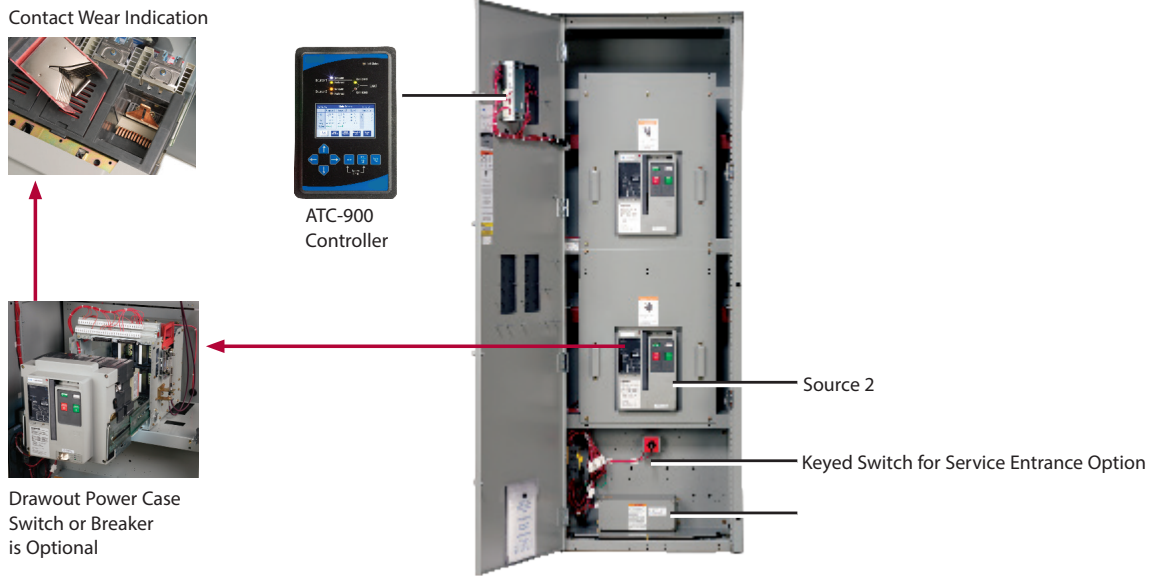
- Load sequence
- Selective Load shed
- Load bank control
- Pre/post-transfer
- Pre-transfer
- User remote control
- Source 1 available (standard)
- Source 2 available (standard)
- Source 1 connected
- Source 2 connected
- ATS not in automatic
- General alarm
- ATS in test
- Engine test aborted
- Cooldown in process
- Engine start contact status
- Generator 1 start status
- Generator 2 start status
- Emergency inhibit on

Up to 20 available with Expandable Input/Output Modules

OPTIONAL FEATURES:

- Digital Multi-function Power Quality Metering
- Ethernet Connectivity
- Draw out construction
- Remote Annunciator Panel with Control
- Remote Multi-switch Annunciator Panel with Control
- TVSS
- Stainless steel cover for controller
- Selectable Retransfer
- Manual Generator Retransfer
- Maintenance Selector Switch

Power Series, Power Frame Type, Closed Transition



TRANSFER SWITCH WITHSTAND RATINGS:

Systems Coordination Information—Withstand, Closing and Interrupting Ratings

Rating When Used with Upstream Circuit Breaker

| Transfer Switch Ampere Rating | 3 Cycle 600V (kA) | 30 Cycle ² 600V (kA) |
|-------------------------------|-------------------|---------------------------------|
| 1600 | 100 | 85 |
| 2000 | 100 | 85 |
| 2500 | 100 | 85 |
| 3000 | 100 | 85 |
| 3200 | 100 | 85 |
| 4000 | 100 | 85 ¹ |
| 5000 | — | 85 ¹ |

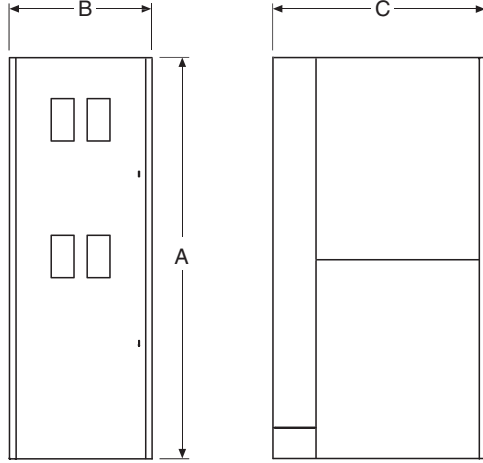
1. UL 1066 short-time rating

2. Ratings used for coordination with upstream breakers with short-time ratings

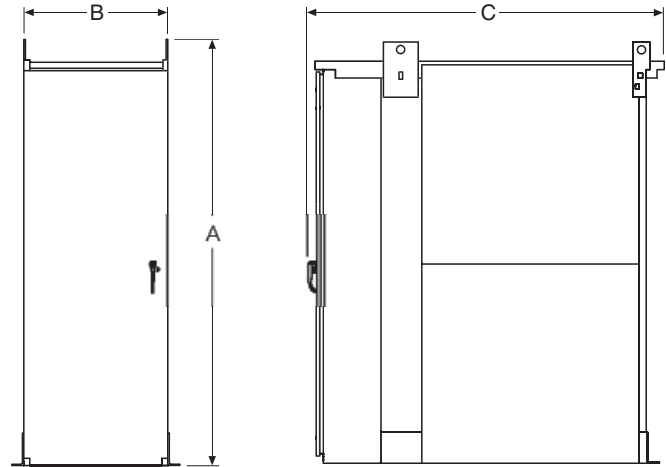
Power Series, Power Frame Type, Closed Transition

UNIT DIMENSIONS:

1600–3200A Fixed-Mount NEMA 1



1600–3200A Fixed-Mount NEMA 3R



*For enclosures alternative than NEMA 1 and 3R, contact factory.

Power Frame Fixed-Mount Transfer Switches

Approximate Dimensions in Inches (mm)

| NEMA 1 Enclosed Fixed-Mount Transfer Switch | | | | | |
|---|-------|----------------|----------------|----------------|--------------------------|
| Ampere Rating | Poles | Height A | Width B | Depth C | Shipping Weight Lbs (kg) |
| 1600-2000 | 3 | 90.00 (2286.0) | 32.00 (812.8) | 48.00 (1219.2) | 1050 (476) |
| 1600-2000 | 4 | 90.00 (2286.0) | 32.00 (812.8) | 48.00 (1219.2) | 1250 (567) |
| 2500-3200 | 3 | 90.00 (2286.0) | 44.00 (1117.6) | 48.00 (1219.2) | 1900 (863) |
| 2500-3200 | 4 | 90.00 (2286.0) | 44.00 (1117.6) | 48.00 (1219.2) | 2000 (907) |

| NEMA 3R Enclosed Fixed-Mount Transfer Switch | | | | | |
|--|-------|----------------|----------------|----------------|--------------------------|
| Ampere Rating | Poles | Height A | Width B | Depth C | Shipping Weight Lbs (kg) |
| 1600-2000 | 3 | 90.00 (2286.0) | 32.00 (812.8) | 48.00 (1219.2) | 1600 (726) |
| 1600-2000 | 4 | 90.00 (2286.0) | 32.00 (812.8) | 48.00 (1219.2) | 1900 (862) |
| 2500-3200 | 3 | 90.00 (2286.0) | 44.00 (1117.6) | 63.00 (1600.2) | 2400 (1090) |
| 2500-3200 | 4 | 90.00 (2286.0) | 44.00 (1117.6) | 63.00 (1600.2) | 2500 (1135) |

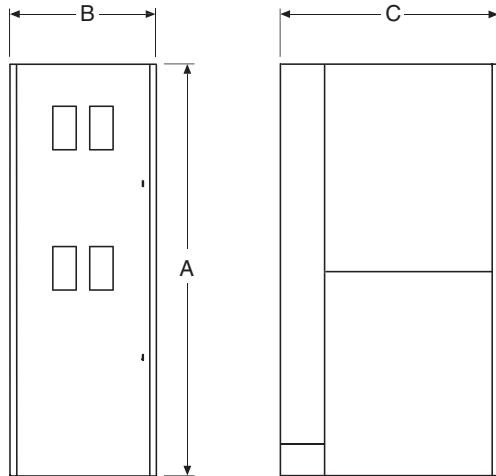
Standard Terminals

| Ampere Rating | Normal, Emergency, and Load | Neutral |
|---------------|-----------------------------|------------------|
| 1600-2000 | (6) 3/0-750 MCM | (24) 4/0-500 MCM |
| 2500-3200 | (9) 3/0-750 MCM | (36) 4/0-500 MCM |

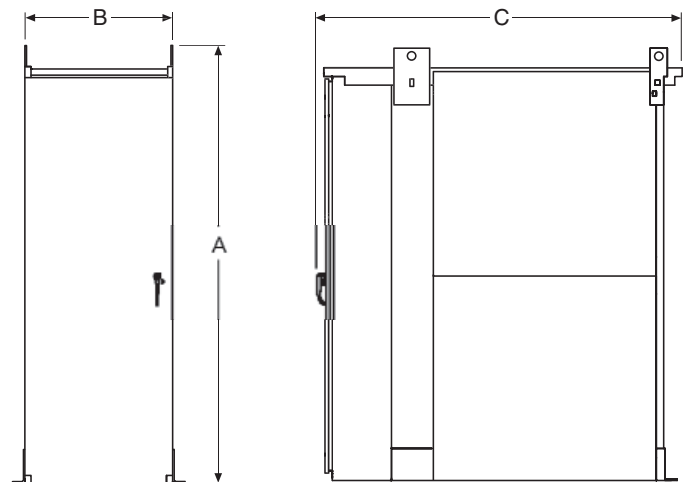
Power Series, Power Frame Type, Closed Transition

UNIT DIMENSIONS:

1600–5000A Drawout NEMA 1



1600–5000A Drawout NEMA 3R



*Seismic mounting brace adds an additional 3 inches to each side - front left and front right side and 3 inches additional to rear side.

Power Frame Drawout Transfer Switches

Approximate Dimensions in Inches (mm)

| NEMA 1 Enclosed Drawout Transfer Switch | | | | | | NEMA 3R Enclosed Drawout Transfer Switch | | | | | |
|---|-------|----------------|----------------|----------------|--------------------------|--|-------|----------------|----------------|----------------|--------------------------|
| Ampere Rating | Poles | Height A | Width B | Depth C | Shipping Weight Lbs (kg) | Ampere Rating | Poles | Height A | Width B | Depth C | Shipping Weight Lbs (kg) |
| 1600-2000 | 3 | 90.00 (2286.0) | 32.00 (812.8) | 60.00 (1524.0) | 1600 (727) | 1600-2000 | 3 | 90.00 (2286.0) | 32.00 (812.8) | 75.00 (1905.0) | 2100 (953) |
| 1600-2000 | 4 | 90.00 (2286.0) | 32.00 (812.8) | 60.00 (1524.0) | 1900 (864) | 1600-2000 | 4 | 90.00(2286.0) | 32.00 (812.8) | 75.00 (1905.0) | 2400 (1089) |
| 2500-3200 | 3 | 90.00 (2286.0) | 44.00 (1117.6) | 60.00 (1524.0) | 2500 (1134) | 2500-3200 | 3 | 90.00 (2286.0) | 44.00 (1117.6) | 75.00 (1905.0) | 3000 (1362) |
| 2500-3200 | 4 | 90.00 (2286.0) | 44.00 (1117.6) | 60.00 (1524.0) | 2800 (1270) | 2500-3200 | 4 | 90.00 (2286.0) | 44.00 (1117.6) | 75.00 (1905.0) | 3300 (1499) |

Standard Terminals

| Ampere Rating | Normal, Emergency, and Load | Neutral |
|---------------|-----------------------------|------------------|
| 1600-2000 | (6) 3/0-750 MCM | (24) 4/0-500 MCM |
| 2500-3200 | (9) 3/0-750 MCM | (36) 4/0-500 MCM |

*For 4000 and 5000A dimensions, please contact factory.