

# Residential Backup Transfer Switch Solutions

**Transfer Switch Solutions**



### 3.1 Automatic Transfer Switches

|   |         |
|---|---------|
| Product Description .....   | V1-T3-2 |
| Application Description .....   | V1-T3-2 |
| Standards and Certifications .....  | V1-T3-3 |
| Catalog Number Selection .....  | V1-T3-3 |
| Product Selection .....   | V1-T3-4 |
| Standard Automatic Transfer Switches .....  | V1-T3-4 |
| Green Automatic Transfer Switches—<br>Featuring Active Load Management Technology ..... | V1-T3-4 |
| ATS Ready Loadcenter .....  | V1-T3-5 |
| Dimensions .....  | V1-T3-6 |

### 3.2 Manual Transfer Switches

|   |          |
|---|----------|
| Product Description .....                                     | V1-T3-7  |
| Application Description .....                                 | V1-T3-7  |
| Features, Benefits and Functions .....                        | V1-T3-7  |
| Standards and Certifications .....                            | V1-T3-8  |
| Reference Information .....                                   | V1-T3-8  |
| Product Selection .....                                       | V1-T3-9  |
| Manual Transfer Switches and Generator Panels Selection ..... | V1-T3-9  |
| Power Inlet Boxes .....                                       | V1-T3-9  |
| Technical Data and Specifications .....                       | V1-T3-10 |
| Dimensions .....  | V1-T3-10 |

# Revision notes

## Volume 1—Residential and Light Commercial, CA08100002E

### Tab 3—Residential Backup Transfer Switch Solutions

| Revision date | Section | Change page(s) | Description                               |
|---------------|---------|----------------|---|
| 04/22/2019    | All     | All            | Updated to April 2019 print revision date |



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# 3.1

## Residential Backup Transfer Switch Solutions

### Automatic Transfer Switches

3

#### Residential Automatic Transfer Switches



#### Product Description

##### 50, 100, 150, 200 and 400 A Fully Automatic

All Eaton automatic transfer switches (ATS) monitor utility and generator voltages and will automatically connect to the appropriate source of power. Eaton offers two types of automatic transfer switches to suit your personal backup power needs—the standard ATS EGSX series with load shedding capabilities and the Green ATS EGSU series that provides a truly active load management solution.

##### Green Line of Automatic Transfer Switches

With the rising cost of commodities and fuel in today’s economy, consumers are concerned with maximizing the value of their purchases.

Electrical loads are now intelligently managed with Eaton’s Green Line of automatic transfer switches. The active load management inside each Green ATS allows the consumer to use 100% of the power rated output of the generator and/or use a smaller generator, reducing upfront installation costs and saving on ongoing fuel consumption costs.

As a part of Eaton’s commitment to quality, every Green ATS, at no extra cost, will ship with a CHSPT2ULTRA whole surge protector, which will help prevent potential damage to valued electronics caused by power surges in the utility line.

#### Contents

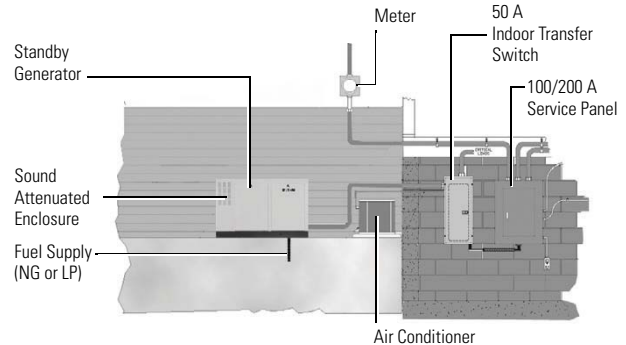
| <i>Description</i>                     | <i>Page</i>    |
|--|----------------|
| Automatic Transfer Switches            |                |
| Standards and Certifications . . . . . | <b>V1-T3-3</b> |
| Catalog Number Selection . . . . .     | <b>V1-T3-3</b> |
| Product Selection . . . . .            | <b>V1-T3-4</b> |
| ATS Ready Loadcenter . . . . .         | <b>V1-T3-5</b> |
| Dimensions . . . . .                   | <b>V1-T3-6</b> |

#### Application Description

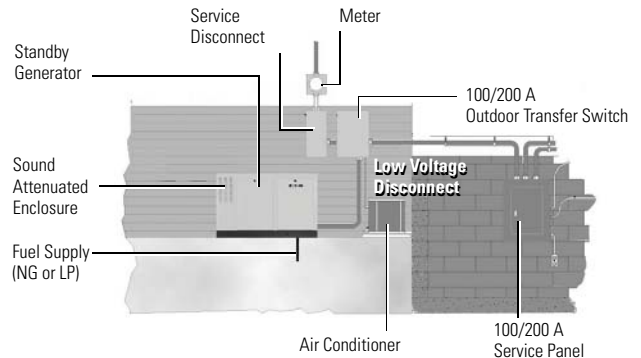
##### 50, 100, 150, 200 and 400 A Switches

100, 200 and 400 A switches are capable of “whole house” power transfer in residential/ small business applications.

##### 50 A—Indoor Installation—Selected Load Pre-Wired



##### 100/200 A—Outdoor Installation—Whole House Pre-Wired



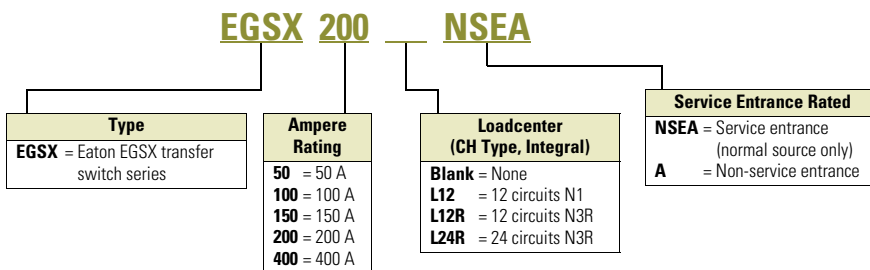
### Standards and Certifications

- UL 1008 listed
- UL 67 listed
- CSA

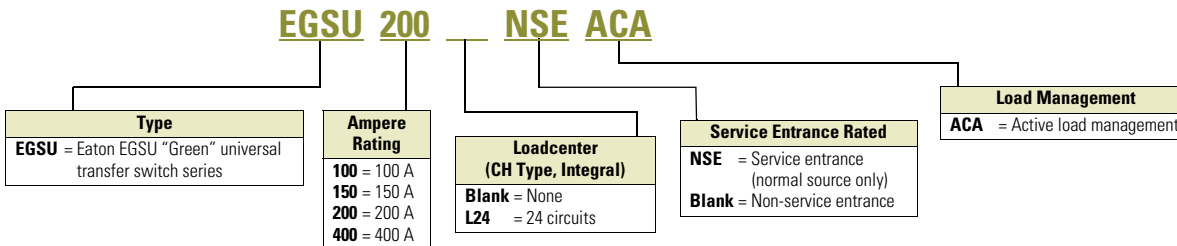


### Catalog Number Selection

#### Standard Automatic Transfer Switches—EGSX Series



#### Green Automatic Transfer Switches—EGSU Series



# 3.1

## Residential Backup Transfer Switch Solutions

### Automatic Transfer Switches

#### Product Selection

EGSX50L12R

#### Standard Automatic Transfer Switches ①



| Ampere Rating | Voltage | Service Entrance Rated | No. of Load Shed Contacts | Contactors Wire Size Range(s) | No. of Cables per Phase | Withstand Current (rms) at 240 Vac | No. of Circuits Included ② | Frequency (Hz) | Enclosure Type    | Most Common Generator Sizes (kW) ③ | Catalog Number |
|---------------|---------|------------------------|---------------------------|-------------------------------|-------------------------|------------------------------------|----------------------------|----------------|-------------------|------------------------------------|----------------|
| 50            | 120/240 | No                     | 2                         | #14–#6                        | 1                       | 5000                               | 12                         | 50/60          | NEMA 1 (indoor)   | 9, 11                              | EGSX50L12      |
| 50            | 120/240 | No                     | 2                         | #14–#6                        | 1                       | 5000                               | 12                         | 50/60          | NEMA 3R (outdoor) | 9, 11                              | EGSX50L12R     |
| 100           | 120/240 | No                     | 2                         | #14–#2/0                      | 1                       | 10,000                             | —                          | 50/60          | NEMA 3R (outdoor) | 9, 11, 16                          | EGSX100A       |
| 100           | 120/240 | Yes                    | 2                         | #14–#2/0                      | 1                       | 10,000                             | —                          | 50/60          | NEMA 3R (outdoor) | 9, 11, 16                          | EGSX100NSEA    |
| 100           | 120/240 | No                     | 2                         | #14–#2/0                      | 1                       | 10,000                             | 24                         | 50/60          | NEMA 3R (outdoor) | 9, 11, 16                          | EGSX100L24RA   |
| 150           | 120/240 | Yes                    | 2                         | #4–300 kcmil                  | 1                       | 10,000                             | —                          | 50/60          | NEMA 3R (outdoor) | 16, 20, 22                         | EGSX150NSEA    |
| 200           | 120/240 | No                     | 2                         | #4–300 kcmil                  | 1                       | 10,000                             | —                          | 50/60          | NEMA 3R (outdoor) | 16, 20, 22                         | EGSX200A       |
| 200           | 120/240 | Yes                    | 2                         | #4–300 kcmil                  | 1                       | 10,000                             | —                          | 50/60          | NEMA 3R (outdoor) | 16, 20, 22                         | EGSX200NSEA    |
| 400           | 120/240 | Yes                    | 2                         | 750 kcmil–2<br>300 kcmil–1/0  | 1/2                     | 35,000                             | —                          | 50/60          | NEMA 3R (outdoor) | >22                                | EGSX400NSEA    |

EGSU200NSEACA

#### Green Automatic Transfer Switches ④—Featuring Active Load Management Technology



| Ampere Rating | Voltage | Service Entrance Rated | Contactors Wire Size Range(s) | No. of Cables per Phase | Withstand Current (rms) at 240 Vac | No. of Circuits Included ② | Frequency (Hz) | Enclosure Type    | Most Common Generator Sizes (kW) ⑤ | Catalog Number ⑤ |
|---------------|---------|------------------------|-------------------------------|-------------------------|------------------------------------|----------------------------|----------------|-------------------|------------------------------------|------------------|
| 100           | 120/240 | No                     | #14–#2/0                      | 1                       | 10,000                             | —                          | 50/60          | NEMA 3R (outdoor) | 9, 11, 16                          | EGSU100ACA       |
| 100           | 120/240 | Yes                    | #14–#2/0                      | 1                       | 10,000                             | —                          | 50/60          | NEMA 3R (outdoor) | 9, 11, 16                          | EGSU100NSEACA    |
| 100           | 120/240 | No                     | #14–#2/0                      | 1                       | 10,000                             | 24                         | 50/60          | NEMA 3R (outdoor) | 9, 11, 16                          | EGSU100L24RACA   |
| 150           | 120/240 | Yes                    | #4–300 kcmil                  | 1                       | 10,000                             | —                          | 50/60          | NEMA 3R (outdoor) | 16, 20, 22                         | EGSU150NSEACA    |
| 200           | 120/240 | No                     | #4–300 kcmil                  | 1                       | 10,000                             | —                          | 50/60          | NEMA 3R (outdoor) | 16, 20, 22                         | EGSU200ACA       |
| 200           | 120/240 | Yes                    | #4–300 kcmil                  | 1                       | 10,000                             | —                          | 50/60          | NEMA 3R (outdoor) | 16, 20, 22                         | EGSU200NSEACA    |
| 400           | 120/240 | Yes                    | 750 kcmil–2<br>300 kcmil–1/0  | 1/2                     | 35,000                             | —                          | 50/60          | NEMA 3R (outdoor) | >22                                | EGSU400NSEACA    |

#### Notes

- ① Standard ATS “EGSX” Series compatible with Generac generators only.
- ② Uses CH type circuit breakers.
- ③ UNIVERSAL ATS: compatible with any single-phase, 120/240 V generator brand.
- ④ For reference only. Generator size must be determined with proper/actual load calculations.
- ⑤ Whole house surge Cat. No. CHSPT2ULTRA included in every Green ATS “EGSU” Series.

### ATS Ready Loadcenter

From the far-reaching power failures brought on by hurricanes and snow/ice storms, to the increasing power outage concerns and an aging electrical infrastructure, backup power is more important than ever. Eaton's ATS Ready loadcenter addresses future backup power needs by enabling a fast, efficient installation of an automatic transfer switch kit to convert from utility power to generator power.

The ATS Ready loadcenter gives homebuilders and electrical contractors the flexibility to install a generator ready system or to install a loadcenter and easily add an ATS in the future. Backup power had never been that versatile before.

### ATS Ready Loadcenter Features

- CH Premium Type 200 A single-phase MCB 36-circuit loadcenter
- 50 A ATS "EGSX" type kit for factory or field installation (compatible with Eaton generators only)
- 22 circuits for non-essential loads and 14 circuits for essential backup power loads
- Versatile, space-saving design
- For use with 9 or 11 kW air-cooled generators
- CH cover included
- Lifetime warranty on CH loadcenter and breakers
- NEMA 1 design
- UL Listed

### ATS Ready Loadcenter

|  | Description   | Catalog Number             |
|--|---|----------------------------|
|  <p><b>CH36B200EGP</b></p>   | <p>ATS Ready loadcenter<br/>Kit CHEGSX50KIT must be ordered separately<br/>Loadcenter only. Includes provision for ATS kit</p>  | <p><b>CH36B200EGP</b></p>  |
|  <p><b>CHEGSX50KIT</b></p>  | <p>ATS "EGSX" kit for ATS Ready loadcenter<br/>Field-installable automatic transfer switch kit<br/>ATS Ready loadcenter CH36B200EGP must be ordered separately<br/>Intuitive, easy installation<br/>Compatible with Generac generators only</p> | <p><b>CHEGSX50KIT</b></p>  |
|  <p><b>CH36B200EGPK</b></p> | <p>ATS Ready LC with factory-installed ATS kit<br/>Factory assembled<br/>Compatible with Generac generator only. Generator needed to complete backup power system</p>   | <p><b>CH36B200EGPK</b></p> |

# 3.1

## Residential Backup Transfer Switch Solutions

### Automatic Transfer Switches

#### Dimensions

Approximate Dimensions in Inches (mm)

#### Automatic Transfer Switches

3

| Catalog Number        | Width         | Height         | Depth         | Weight<br>Lbs (kg) |
|-----------------------|---------------|----------------|---------------|--------------------|
| <b>EGSX50L12</b>      | 14.25 (362.0) | 21.00 (533.4)  | 4.00 (101.6)  | 25 (11.33)         |
| <b>EGSX50L12R</b>     | 14.25 (362.0) | 21.00 (533.4)  | 6.00 (152.4)  | 29 (13.15)         |
| <b>EGSX100A</b>       | 14.46 (367.3) | 16.87 (428.5)  | 5.32 (135.1)  | 25 (11.33)         |
| <b>EGSX100NSEA</b>    | 14.46 (367.3) | 16.87 (428.5)  | 5.32 (135.1)  | 28 (12.70)         |
| <b>EGSX100L24RA</b>   | 14.46 (367.3) | 29.33 (744.0)  | 5.32 (135.1)  | 38 (17.24)         |
| <b>EGSX200A</b>       | 14.46 (367.3) | 25.08 (637.0)  | 5.25 (133.4)  | 35 (15.87)         |
| <b>EGSX150NSEA</b>    | 14.46 (367.3) | 29.20 (741.7)  | 5.32 (135.1)  | 45 (20.41)         |
| <b>EGSX200NSEA</b>    | 14.46 (367.3) | 29.20 (741.7)  | 5.32 (135.1)  | 45 (20.41)         |
| <b>EGSU100L24RACA</b> | 14.46 (367.3) | 29.33 (745.0)  | 5.32 (135.1)  | 38 (17.24)         |
| <b>EGSU100ACA</b>     | 14.46 (367.3) | 16.87 (428.5)  | 5.32 (135.1)  | 25 (11.33)         |
| <b>EGSU100NSEACA</b>  | 14.46 (367.3) | 16.87 (428.5)  | 5.32 (135.1)  | 28 (12.70)         |
| <b>EGSU150NSEACA</b>  | 14.46 (367.3) | 29.20 (741.7)  | 5.32 (135.1)  | 45 (20.41)         |
| <b>EGSU200ACA</b>     | 14.46 (367.3) | 25.08 (637.0)  | 5.25 (133.4)  | 35 (15.88)         |
| <b>EGSU200NSEACA</b>  | 14.46 (367.3) | 29.20 (741.7)  | 5.32 (135.1)  | 45 (20.41)         |
| <b>EGSU400NSEACA</b>  | 23.14 (587.8) | 35.55 (903.0)  | 10.00 (254.0) | 120 (54.43)        |
| <b>CH36B200EGPK</b>   | 14.31 (363.5) | 47.50 (1206.5) | 3.88 (98.6)   | 40 (18.14)         |

All Panels are Manufactured in the USA and Meet UL 1008



### Contents

| <i>Description</i>                          | <i>Page</i>     |
|---|-----------------|
| Manual Transfer Switches                    |                 |
| Standards and Certifications . . . . .      | <b>V1-T3-8</b>  |
| Reference Information . . . . .             | <b>V1-T3-8</b>  |
| Product Selection . . . . .                 | <b>V1-T3-9</b>  |
| Technical Data and Specifications . . . . . | <b>V1-T3-10</b> |
| Dimensions . . . . .                        | <b>V1-T3-10</b> |



### Product Description

A manual transfer switch is a device that is mounted next to the loadcenter (distribution panel) in the home or small business. The manual transfer switch is used in conjunction with a portable backup power generator and serves the purpose of turning selected circuits on and off during a power outage. The transfer switch panel allows the owner to start up a generator to restore power to critical circuits when utility power is not available.

The owner designates which circuits are critical, such as the refrigerator and certain lights. Sometimes called emergency power panels or emergency generator panels, manual transfer switch panels provide the homeowner or small business owner with a safe and easy way to continue using electrical appliances when the utility power is unavailable temporarily.

### Application Description

Manual transfer switches are most often used in residential, agricultural and light commercial applications. Comfort and safety are key concerns of many homeowners who are dependent on an uninterrupted supply of electricity.

The increase in our dependence on power is due in part to the popularity of home offices and in-home health care. Various heavily populated regions of the United States experience periodic power outages due to extreme weather conditions, such as ice and snowstorms, heat waves, tornadoes or hurricanes. These regions that include the Pacific Northwest, Atlantic Coast and the Gulf Coast are the strongest markets for portable generators and manual transfer switches.

### Features, Benefits and Functions

Eaton offers two manual transfer switch backup power solutions:

- Manual transfer switches
- Generator panels

#### Manual Transfer Switches

- Panel and components sold separately
- Hardwired generator connection
- Ideal for new construction/larger loads
- Sturdy copper bus construction
- Uses CH and CHT circuit breaker types (sold separately)
- Mechanically interlocked main disconnects to prevent paralleling of normal and emergency power source
- Indoor and outdoor designs available



**Manual Transfer Switch  
Indoor Design**



**Manual Transfer Switch  
Indoor/Outdoor Design**



#### Generator Panels

- Mechanically interlocked main disconnects prevent paralleling of normal and emergency power source
- Panel and components sold separately
- Integral plug-in generator connection (power inlet box)
- All circuit breakers are included—switching duty rated
- Includes dual wattmeters for load balancing
- Indoor and outdoor designs available



**Generator Panel  
Indoor Design**



**Generator Panel  
Outdoor Design**

#### Standards and Certifications

- UL 67 listed
- UL 1008 listed



#### Reference Information

##### Cross-Reference

| Watts  | Number of Circuits | Ampere Rating | Catalog Number Eaton   | Gen/Tran <sup>①</sup> | EmerGen <sup>①</sup> | Square D    | Generac <sup>②</sup> |
|--------|--------------------|---------------|------------------------|-----------------------|----------------------|-------------|----------------------|
| 5000   | 4–8                | 30            | <b>CH48GEN3060R</b>    | —                     | —                    | QQ48M30DSGP | —                    |
| 15,000 | 8–16               | 60            | <b>CH816GEN6060</b>    | —                     | —                    | QQ48M60DSGP | —                    |
| 5000   | 6                  | 20            | <b>CH6EGEN2060</b>     | 20216                 | 6-5000               | —           | —                    |
| 5000   | 6                  | 20            | <b>CH6EGEN2060R</b>    | R20216                | 6-5000 + RTE657      | —           | —                    |
| 5000   | 6                  | 20            | <b>CH6EGEN2060SU</b>   | —                     | —                    | —           | —                    |
| 5000   | 6                  | 20            | <b>CH6EGEN2060RSU</b>  | —                     | —                    | —           | —                    |
| 7500   | 10                 | 30            | <b>CH10EGEN3060</b>    | 302110-20             | 10-7500              | —           | —                    |
| 7500   | 10                 | 30            | <b>CH10EGEN3060R</b>   | R30211-20             | 10-7500 + RTE1075    | —           | —                    |
| 7500   | 10                 | 30            | <b>CH10EGEN3060SUR</b> | —                     | —                    | —           | —                    |
| 7500   | 10                 | 30            | <b>CH10EGEN3060RSU</b> | —                     | —                    | —           | —                    |
| 7500   | 10                 | 30            | <b>CH10GEN5030SN</b>   | —                     | —                    | —           | —                    |
| 7500   | 10                 | 30            | <b>CH10GEN5030RSN</b>  | —                     | —                    | —           | —                    |
| 12,000 | 10                 | 50            | <b>CH10GEN5050SN</b>   | —                     | —                    | —           | —                    |
| 12,000 | 10                 | 50            | <b>CH10GEN5050RSN</b>  | —                     | —                    | —           | —                    |

#### Notes

- <sup>①</sup> Gen/Trans device is not supplied with a power cord.
- <sup>②</sup> Generac device is 7200 maximum watts on six-circuit device and 12,000 maximum watts on 10-circuit device.

### Product Selection



#### Manual Transfer Switches and Generator Panels Selection

| Enclosure Type                                 | Watts  | Number of Circuits | Ampere Rating | Main/Emergency Ampere Rating | Feeder Breakers        | Included Accessories     | Catalog Number         |
|--|--------|--------------------|---------------|------------------------------|------------------------|--------------------------|------------------------|
| <b>Standard Manual Transfer Switch</b>         |        |                    |               |                              |                        |                          |                        |
| NEMA 3R  | 5000   | 4–8                | 30            | Provision                    | Provision              | None                     | <b>CH48GEN3060R</b>    |
| NEMA 1   | 10,000 | 8–16               | 60            | Provision                    | Provision              | None                     | <b>CH816GEN6060</b>    |
| <b>Generator Panel</b>                         |        |                    |               |                              |                        |                          |                        |
| NEMA 1   | 5000   | 6                  | 20            | 60/20                        | 5–1P151–1P20           | None                     | <b>CH6EGEN2060</b>     |
| NEMA 3R  | 5000   | 6                  | 20            | 60/20                        | 5–1P151–1P20           | None                     | <b>CH6EGEN2060R</b>    |
| NEMA 1   | 5000   | 6                  | 20            | 60/20                        | 5–1P151–1P20           | Two-pole surge protector | <b>CH6EGEN2060SUR</b>  |
| NEMA 3R  | 5000   | 6                  | 20            | 60/20                        | 5–1P151–1P20           | Two-pole surge protector | <b>CH6EGEN2060RSU</b>  |
| NEMA 1   | 7500   | 10                 | 30            | 60/30                        | 6–1P152–1P2012P30      | None                     | <b>CH10EGEN3060</b>    |
| NEMA 3R  | 7500   | 10                 | 30            | 60/30                        | 6–1P152–1P2012P30      | None                     | <b>CH10EGEN3060R</b>   |
| NEMA 1   | 7500   | 10                 | 30            | 60/30                        | 7–1P152–1P2012P30      | Two-pole surge protector | <b>CH10EGEN3060SUR</b> |
| NEMA 3R  | 7500   | 10                 | 30            | 60/30                        | 7–1P152–1P2012P30      | Two-pole surge protector | <b>CH10EGEN3060RSU</b> |
| <b>Switched Neutral Manual Transfer Switch</b> |        |                    |               |                              |                        |                          |                        |
| NEMA 1   | 7500   | 10                 | 30            | 50/30                        | 6–1P15, 2–1P20, 1–2P30 | None                     | <b>CH10GEN5030SN</b>   |
| NEMA 3R  | 7500   | 10                 | 30            | 50/30                        | 6–1P15, 2–1P20, 1–2P30 | None                     | <b>CH10GEN5030RSN</b>  |
| NEMA 1   | 12,000 | 10                 | 50            | 50/50                        | 6–1P15, 2–1P20, 1–2P30 | None                     | <b>CH10GEN5050SN</b>   |
| NEMA 3R  | 12,000 | 10                 | 50            | 50/50                        | 6–1P15, 2–1P20, 1–2P30 | None                     | <b>CH10GEN5050RSN</b>  |



#### Power Inlet Boxes

| Description  | Ampere Rating | Voltage   | Catalog Number    |
|--|---------------|-----------|-------------------|
| Flush flange kit (for use with generator panel only) | —             | 120/240 V | <b>CHEGENFKIT</b> |
| Power inlet box                                      | 20            | 120/240 V | <b>EGSPIB20</b>   |
| Power inlet box                                      | 30            | 120/240 V | <b>EGSPIB30</b>   |
| Power inlet box                                      | 50            | 120/240 V | <b>EGSPIB50</b>   |

### Warranty

#### Manual Transfer Switch

- 15-year loadcenter warranty
- Lifetime branch breaker warranty

#### Generator Panel

- 15-year loadcenter warranty
- Lifetime branch breaker warranty

# 3.2

## Residential Backup Transfer Switch Solutions

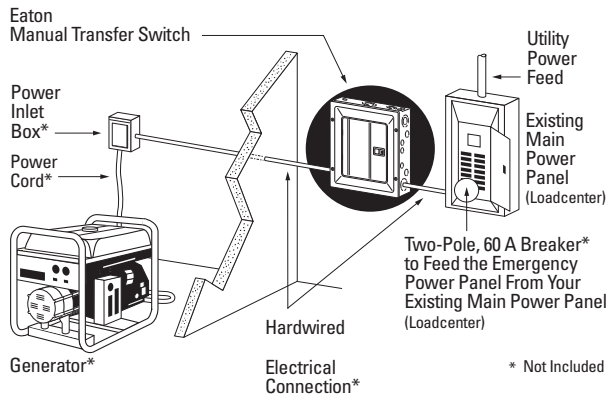
### Manual Transfer Switches

#### Technical Data and Specifications

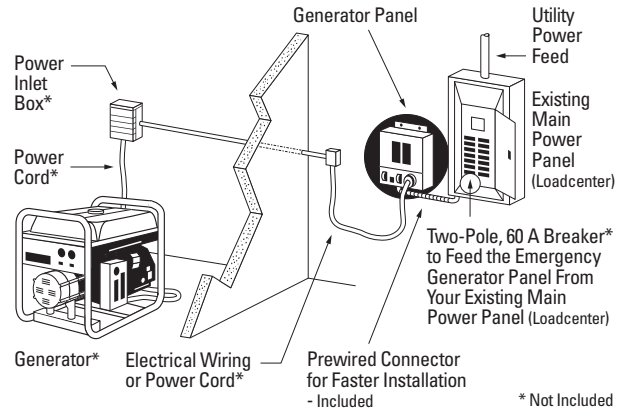
- 10,000 AIC rating
- Switching devices must be circuit breakers
- Manual transfer switch must be supplied with neutral and ground
- Power inlet box must be connected to a circuit breaker for generator protection

#### Installation Diagrams

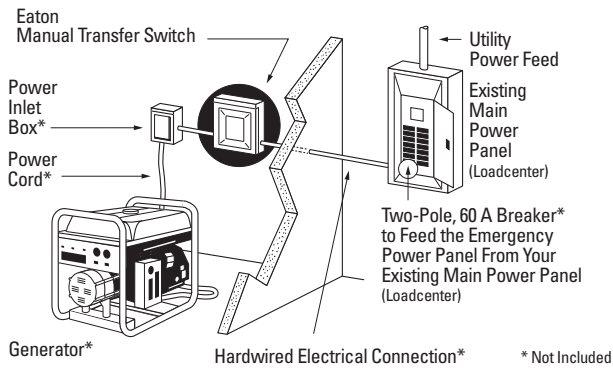
##### Manual Transfer Switches—Indoor Installation Diagram



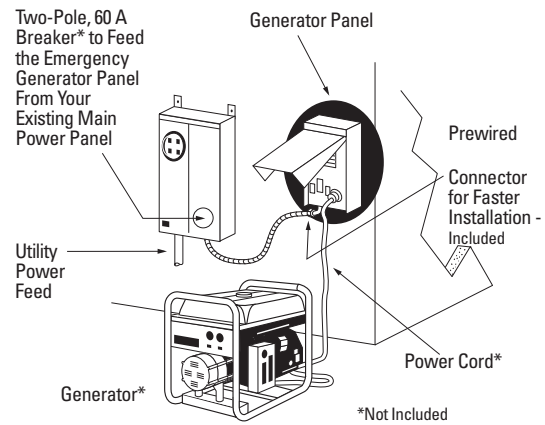
##### Generator Panels—Indoor Installation Diagram



##### Manual Transfer Switches—Outdoor Installation Diagram



##### Generator Panels—Outdoor Installation Diagram



#### Dimensions

Approximate Dimensions in Inches (mm)

##### Manual Transfer Switch

| Enclosure Type | Height        | Width         | Depth       | Weight Lbs (kg) |            |
|----------------|---------------|---------------|-------------|-----------------|------------|
|                |               |               |             | 6-Circuit       | 10-Circuit |
| NEMA 1         | 16.75 (425.5) | 14.31 (363.5) | 3.88 (98.5) | 24 (11)         | 26 (12)    |
| NEMA 3R        | 13.00 (330.2) | 11.00 (279.4) | 3.56 (90.4) | 29 (13)         | 31 (14)    |

##### Generator Panel

| Enclosure Type | Height        | Width         | Depth        | Weight Lbs (kg) |            |
|----------------|---------------|---------------|--------------|-----------------|------------|
|                |               |               |              | 6-Circuit       | 10-Circuit |
| NEMA 1         | 13.23 (336.0) | 11.41 (289.8) | 4.10 (104.1) | 24 (11)         | 26 (12)    |
| NEMA 3R        | 17.12 (434.8) | 9.45 (240.0)  | 7.16 (181.9) | 29 (13)         | 31 (14)    |