

ASCO SERIES 185 Power Transfer Switches

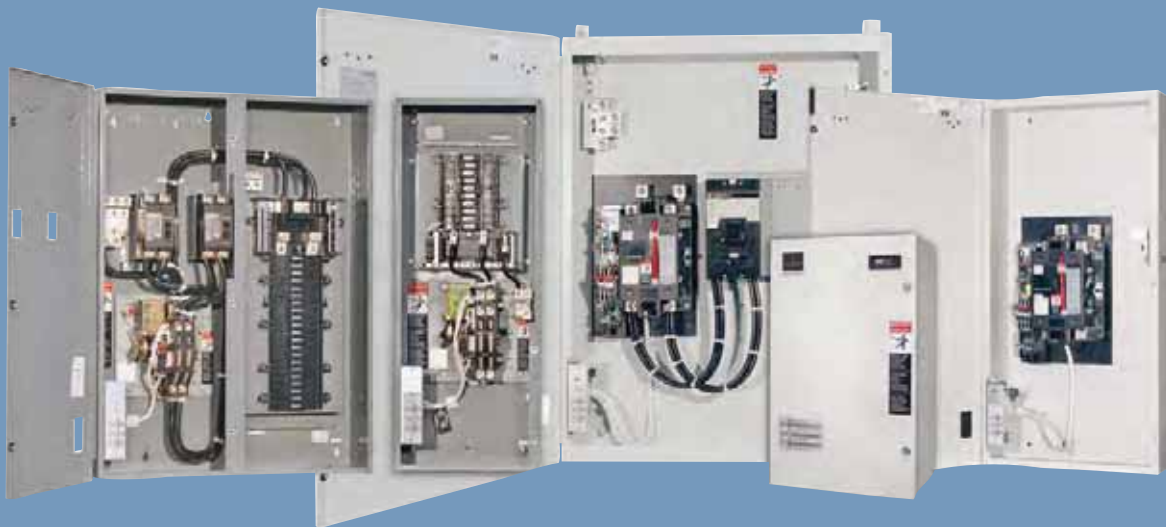


ASCO[®]


EMERSON[™]
Network Power



ASCO SERIES 185 Power Transfer Switches



An Automatic Transfer Switch helps prevent...

- Your business or home from losing power during bad weather or utility power equipment failures
- The loss of valuable information needed from your computer to keep your business going or maintain important personal data
- Frozen and ruptured water pipes, flooded basements, as well as loss of heat, well water, air conditioning, sump pump, and other vital systems
- Frozen foods from thawing, and refrigerated foods from spoiling
- Personal injury and generator damage by eliminating the possibility of connecting the utility and generator at the same time

ASCO is there for you even when you're not

Computers, communication and information systems, security systems, cash registers, heating systems, water heaters, refrigerators and freezers, air conditioners, sump pumps, well pumps...nearly every system in your business or home depends on electric power. It's easy to take that

power for granted, but when it fails, the results can be disastrous. Generators can restore power to these vital systems...but they can only operate when someone turns them on! So what do you do when no one is around?

ASCO SERIES 185 Automatic Transfer Switch

products provide all the intelligence your generator needs to make sure the power stays on when utility power fails. It automatically senses loss of utility power, and signals your generator to start and restore power to your business or home. The SERIES 185 Automatic Transfer Switch will automatically

transfer your vital loads back to utility power when it has been restored.

Working hand in hand with your generator, ASCO's SERIES 185 Automatic Transfer Switch silently provides dependable 24-hour protection from a power failure, and springs into action only when needed.

ASCO Power Transfer Switch
Solutions for Powerful Peace of Mind



Power protection.

- Power outages cause millions of dollars of damage to businesses and residences annually... not to mention jeopardizing personal safety and convenience.
- A generator is only one piece of the solution... ASCO provides the other.
- An ASCO SERIES 185 Automatic Transfer Switch is the vital electrical link that helps make continuous power virtually seamless...and hassle free.
- ASCO SERIES 185 Automatic Transfer Switches are suitable for operation with most portable or permanently mounted standby generators from 2 kW to 80 kW.
- Whether you're home or not, an ASCO SERIES 185 Automatic Transfer Switch and your generator will provide the ability to maintain power to your business or home.



Protect your home, business, and peace of mind with the ASCO SERIES 185 Automatic Transfer Switch.

Why should you choose an ASCO Automatic Power Transfer Switch?

Customer service, rock-solid dependability, and the industry's highest performance have made ASCO the first choice in emergency power for more than 80 years. Our power transfer switches are used in more emergency power backup systems worldwide than any other. ASCO is the name behind most of the technological advances in transfer switch design, and we have more patents than all other manufacturers combined. ASCO transfer switches are the first choice for installations of every kind, from homes and small businesses to the largest financial data centers and hospitals in the world.

What you should know about UL 1008—and your safety.

The SERIES 185—and every ASCO Transfer Switch—meets or exceeds the stringent requirements of UL 1008, the only UL transfer switch standard. It even says so right on the front panel. If you don't see the UL "Automatic Transfer Switch" label...you're not getting the best protection money can buy.



ASCO SERIES 185 Rated 200 Amps

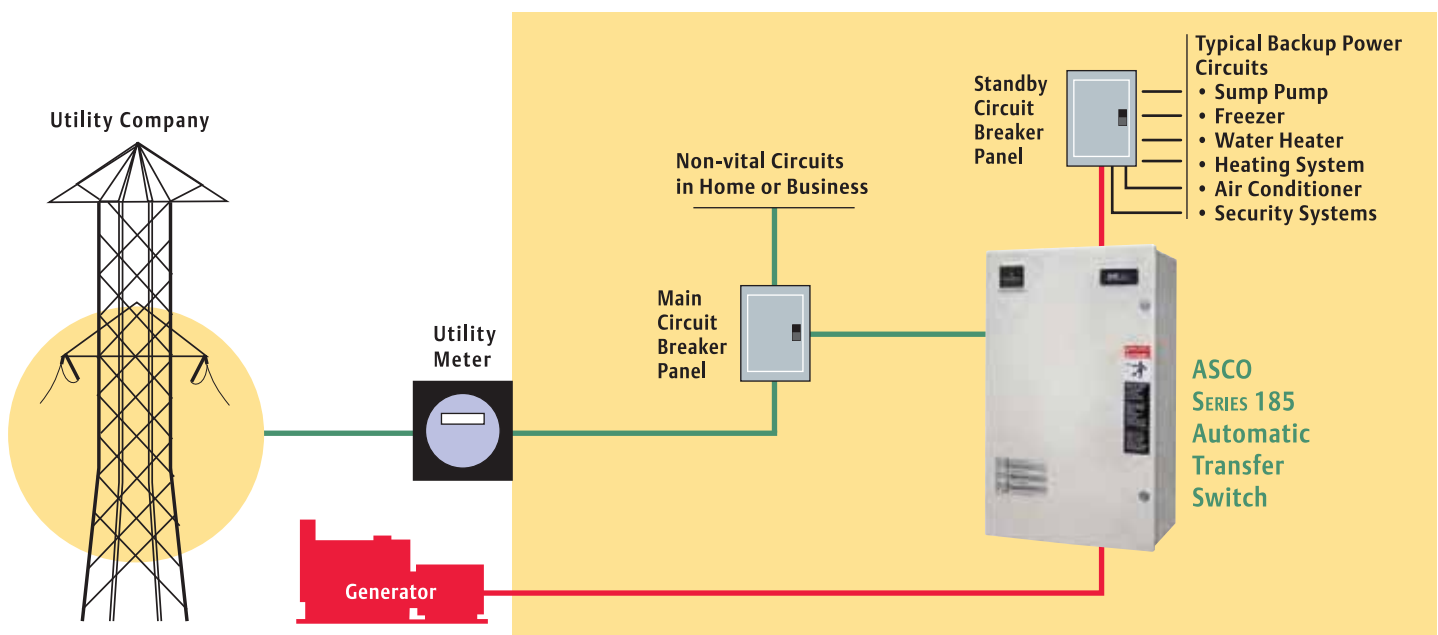


Performance sets the SERIES 185 apart

The SERIES 185 Automatic Transfer Switch incorporates the latest technology developed by ASCO for dependable operation in any environment

- When utility power fails for just 1 second or more, the SERIES 185 Automatic Transfer Switch signals the generator to start
- In less than 30 seconds your electrical power is normally restored
- Once the SERIES 185 Automatic Transfer Switch senses utility power has reached an acceptable voltage level for a period of time, it automatically reconnects your power
- It then smoothly shuts the generator down after an adjustable 2 - 5 minute cool-down period to extend generator life
- The user-friendly control panel also allows you to manually run a test at the push of a button
- LED indicators let you know the availability of both power sources and transfer switch positions

System Diagram



ASCO SERIES 185 Residential/Light Commercial Automatic Transfer Switches

Product Features

- User-friendly control interface with intuitive symbols and visual indicators to inform operator of transfer switch and power source status
- Listed to UL 1008 for optional standby systems, handling total system load including motors and all other electrical loads
- cUL Listed for Canadian installations
- Meets Article 702, NFPA-70 National Electric Code (NEC) requirements
- Nominal service voltage 240V 50/60Hz, single phase, 3 wire AC systems
- Available in 100 through 400A ratings
- 200A and 400A Service Entrance designs feature disconnect circuit breaker on normal source
- True double-throw contacts with inherent mechanical interlocking to prevent connection of generator and utility sources
- Terminals for convenient connection of neutral and ground conductors
- Available in NEMA Type 1 Indoor (steel) and Type 3R Outdoor (aluminum) enclosures, with hinged door designs
- Suitable for controlling standby generators with 2-wire automatic starting circuits
- Available in manually operated version, up to 230A
- Available from stock
- 24 hour support, call 1-800-800-ASCO

External Power Connections¹

Switch Rating (Amps)	Wiring Size Range
100	(1) #14 to 4/0 AWG
200	(1) #14 to 4/0 AWG
230	(1) #14 to 4/0 AWG
400	(2) 1/0 AWG to 250 MCM or (1) # 4 AWG to 600 MCM

1. UL listed for 200 or 230 amps with copper conductors only. For individual dwelling units as defined in NFPA 70 (NEC), in cases where the transfer switch is between the service main disconnect and the lighting and appliance branch circuit panelboard(s), NFPA 70 allows for a reduction in size of the feeder conductors. All other applicable requirements of NFPA 70 regarding conductor Ampacities must also be adhered to. Always install electrical equipment to the requirements defined by the authority having jurisdiction.



ASCO SERIES 185 Rated 400 Amps in Type 1 indoor (steel) enclosure

Time Delays

- Adjustable 1 or 3 second time delay to override momentary normal source outages to delay all transfer switch and engine starting signals
- Transfer to emergency time delay - fixed at 10 seconds
- Retransfer to normal time delay - fixed at 5 minutes
- Adjustable 2 or 5 minute unloaded running time delay for emergency engine cooldown
- Four - second time delay to ignore momentary voltage and frequency transients during initial genset loading

Withstand and Close-On Ratings

Switch Rating (Amps)	When Used With Current Limiting Fuses	When Used With Circuit Breakers
100	200 KA	10 KA
200	200 KA	10 KA
230	100 KA	10 KA
400	200 KA	35 KA

ASCO SERIES 185 Enclosure Offerings and Optional Accessories

Type 1 Indoor Enclosure

- Listed to UL 50 standard for electrical equipment enclosures
- Fabricated from 14 gauge steel
- Finish - textured RAL 7035 light gray polyester powder coating which is aesthetically conducive for residential applications
- Doors secured with captive fasteners
- Conduit knockouts on top/bottom, and both sides

Type 3R Outdoor Secure Enclosure

- Door over door secure construction
- Listed to UL 50 standard for electrical equipment enclosures
- Fabricated from heavy gauge aluminum alloy suited to the size and Ampere rating of the switch
- Highly corrosion resistant
- Finish - textured RAL 7035 light gray polyester powder coating
- Doors secured with captive fasteners
- Gasketed enclosure minimizes ingress of water and dust
- Internal dead front panel for user safety when accessing controls
- Conduit knockouts on bottom, and both sides

Optional Accessories

Strip Heater

A strip heater with thermostat is recommended for extremely cold areas to prevent condensation and freezing of this condensation. An external 120 volt source is required¹.



Strip Heater
p/n K732212-003

Accessory 14A/14B

Auxiliary contacts to indicate position of main contacts. One (1) for normal and (1) for emergency positions^{1,2}.
Auxiliary Contact Kit p/n K373314

Connectivity module and remote annunciator kit¹

Annunciator mounts in a standard 4"x4" gang wall box. The Annunciator provides switch status, source availability, audible alarm, and transfer test.



Connectivity Module and remote annunciator kit
p/n K871966-002

1. Available as kit only for mounting by end user.
2. Auxiliary contact kit available for 100-230 amp only.

ASCO SERIES 185 Ordering Information

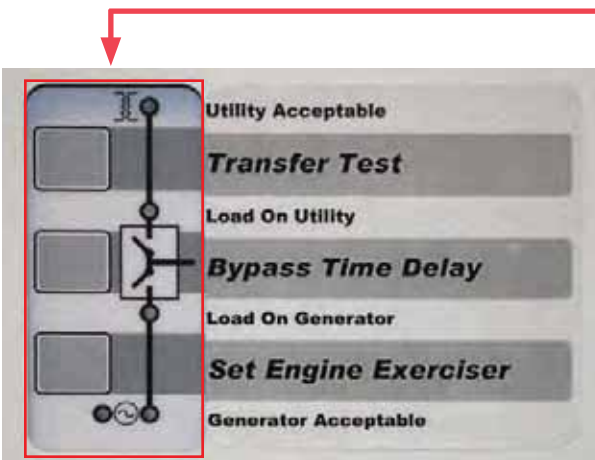
Automatic Transfer Switch

Catalog Number	Enclosure	Construction	Amps	Poles	Width in(mm)	Height in (mm)	Depth in(mm)	Weight lb(kg)
185A2100F4C	Type 1 Indoor	Steel	100	2	14.25(362)	24(610)	8.25(210)	44(20)
185A2200F4C	Type 1 Indoor	Steel	200	2	14.25(362)	24(610)	8.25(210)	44(20)
185A2230F4C	Type 1 Indoor	Steel	230	2	14.25(362)	24(610)	8.25(210)	44(20)
185A2400F4C	Type 1 Indoor	Steel	400	2	22(559)	45(1143)	7.5(191)	79(28)
185A2100F4M	Type 3R Outdoor ¹	Aluminum	100	2	16(406)	24(610)	10(254)	49(22)
185A2200F4M	Type 3R Outdoor ¹	Aluminum	200	2	16(406)	24(610)	10(254)	49(22)
185A2230F4M	Type 3R Outdoor ¹	Aluminum	230	2	16(406)	24(610)	10(254)	49(22)
185A2400F4M	Type 3R Outdoor ¹	Aluminum	400	2	24(610)	48(1219)	10(254)	118(53)

¹. Type 3R enclosures provide a degree of protection against falling dirt, rain, sleet and snow. Additional protection may be required in locations subject to wind blown conditions.

ASCO SERIES 185 Residential Microprocessor Controller

The ASCO group 4 Microprocessor Controller is used with all sizes of the SERIES 185 Power Transfer Switches. Includes as standard all of the voltage, frequency, control, timing and connectivity functions required for most optional standby power applications.



Control and Interface Panel



ASCO SERIES 185
Microprocessor Controller

Voltage and Frequency Sensing

- Adjustable single phase sensing on normal source
- Normal source pickup voltage is adjustable to either 198 volts or 209 volts; drop-out is adjustable to four incremental settings, 154 volts, 176 volts, 187 volts, or 198 volts
- Frequency sensing on emergency source. Pickup is 57 Hz (nom 60 Hz) or 48 Hz (nom 50 Hz), and dropout is 51 Hz (nom 60 Hz), and 43 Hz (nom 50 Hz)

Standard Selectable Features

- Engine exerciser to automatically test backup generator each week - Includes control switch for testing with or without load
- Selective load disconnect, double - throw contact to operate at an adjustable 0 - 20 second adjustable time delay prior to transfer and reset 0 to 20 seconds after transfer
- 60 Hz or 50 Hz selectable switch

Remote Control Feature

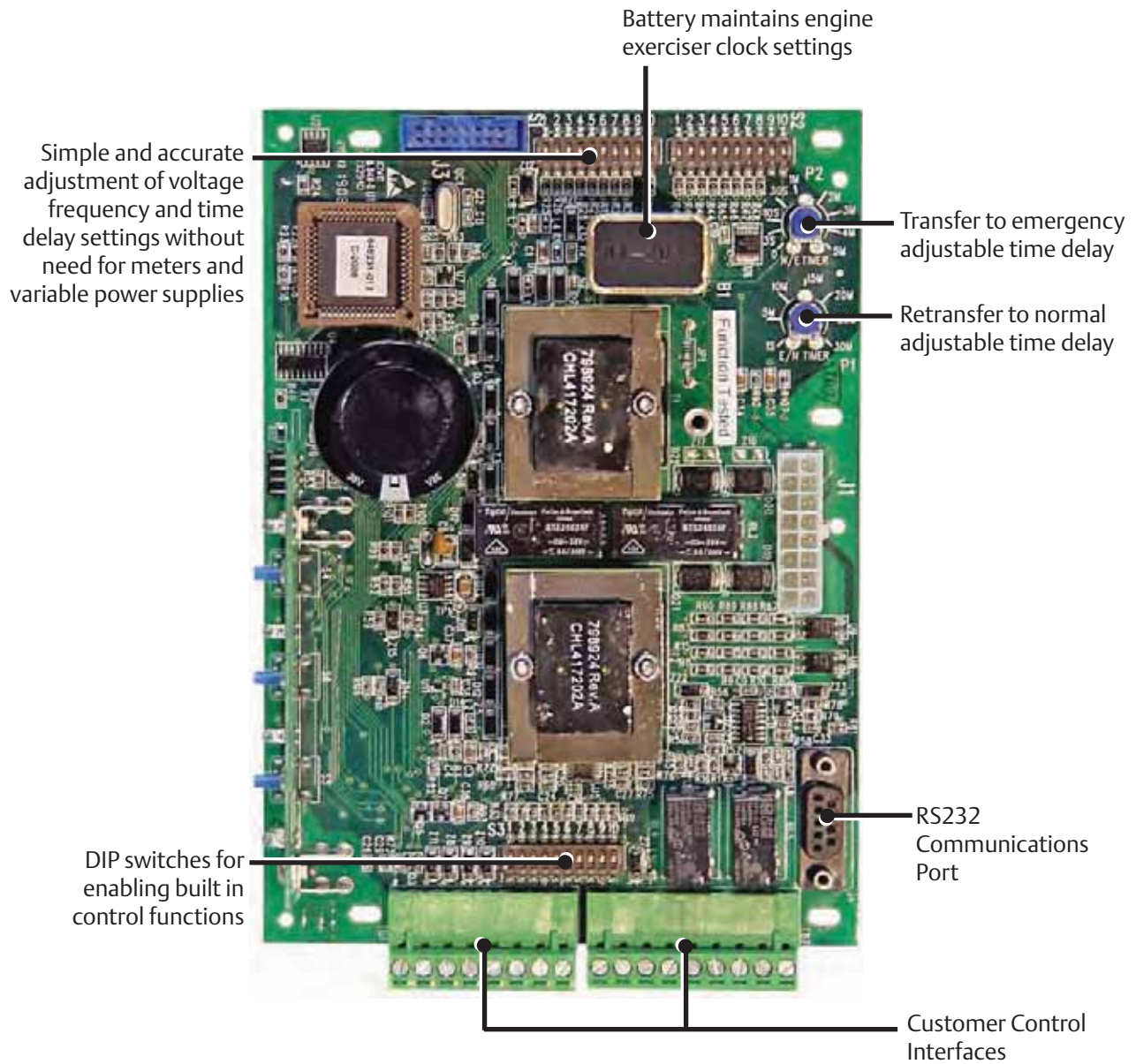
Terminal provisions for connecting :

- Remote test switch
- Remote test switch with automatic transfer
- Remote time delay bypass switch

Control and Interface Panel -

User - friendly control interface with intuitive symbols and visual indicators to inform operator of transfer switch and power source status

ASCO SERIES 185 Residential Microprocessor Controller



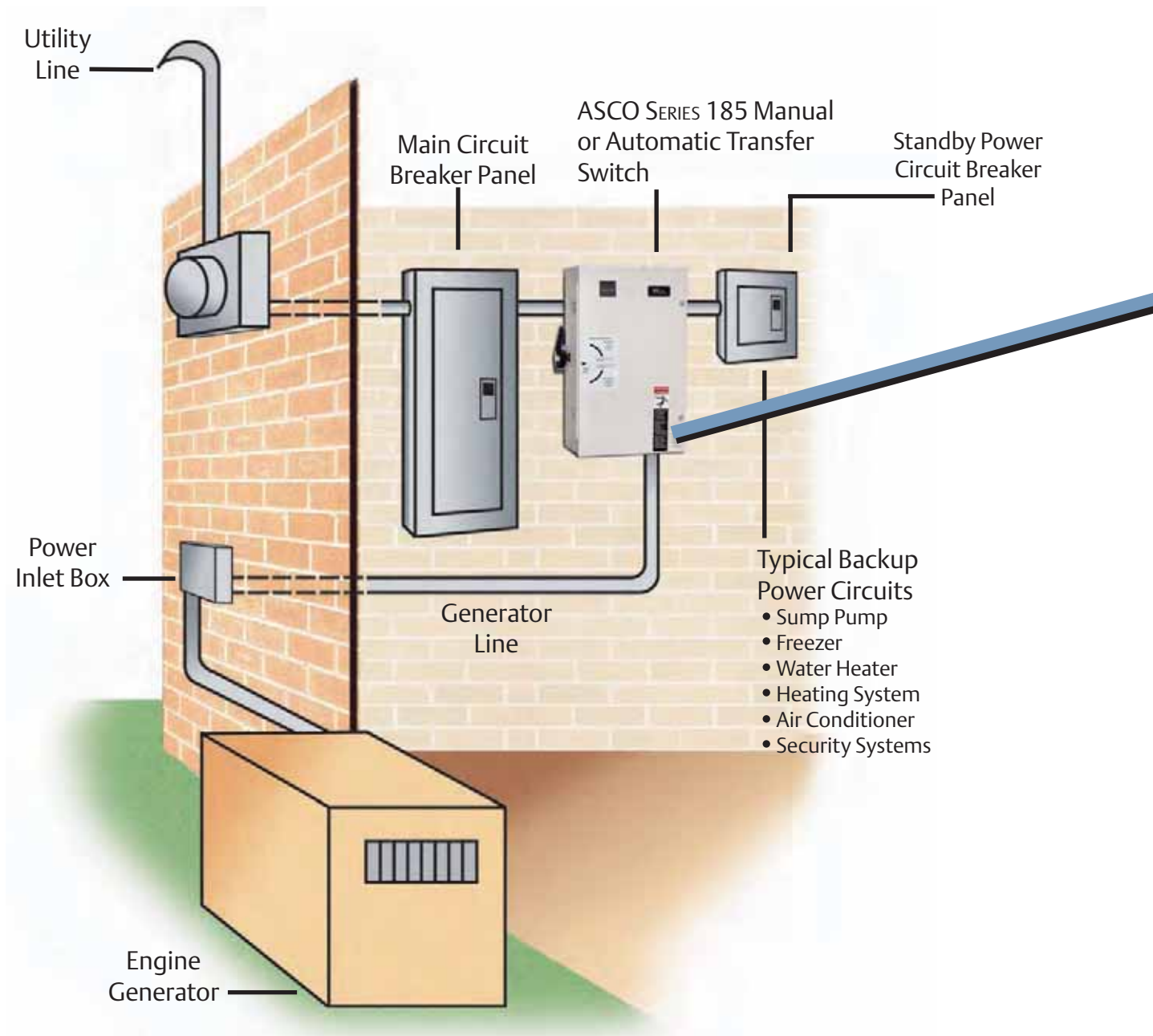
Performance Features

- 240 volt spacing per UL and CSA standards
- Meets or exceeds the requirements of the following regulatory agencies:
 - UL 1008
 - CSA C22.2 No. 178
 - IEC 60947-6-1
 - NFPA 110
- Meets or exceeds the requirements for Electromagnetic Compatibility (EMC)
 - IEC60947-6-1 and CISPR Radiated and Conducted Emissions
 - IEC61000-4-2 Electric Discharge
 - IEC61000-4-3 Electromagnetic Field Immunity
 - IEC61000-4-4 Electrical Fast Transients
 - IEC61000-4-5 Surge Immunity
 - IEC61000-4-6 Conducted Disturbances
 - FCC CFR 47 Part 15

ASCO SERIES 185 Residential/ Light Commercial Manual Transfer Switches

Product Features

- Identical to the electrically operated type 185 except operation is manually initiated
- Operation is achieved through direct manual quick-make/quick-break handle from the outside of the enclosure
- True double-throw, inherently interlocked construction to absolutely prohibit connecting both sources together
- Listed to UL 1008 for optional standby systems
- Ideal for those applications that have manual start generators without provisions for automatic engine start
- Padlocking provisions on operating handle to prevent unauthorized operation
- Same withstand and close-on ratings as SERIES 185 automatic version





185 Manual Transfer Switch



185 Manual Transfer Switch Door Open

External Power Connections¹

Switch Rating (amps)	Wire Size Range
100	(1) #14 to 4/0 AWG
200	(1) #14 to 4/0 AWG
230	(1) #14 to 4/0 AWG

1. UL listed for 200 or 230 amps with copper conductors only. For individual dwelling units as defined in NFPA 70 (NEC), in cases where the transfer switch is between the service main disconnect and the lighting and appliance branch circuit panelboard(s), NFPA 70 allows for a reductions in size of the feeder conductors. All other applicable requirements of NFPA 70 regarding conductor Ampacities must also be adhered to. Always install electrical equipment to the requirements defined by the authority having jurisdiction.

Ordering Information

Manual Transfer Switch

Catalog Number	Enclosure	Construction	Amps	Poles	Width in(mm)	Height in (mm)	Depth in(mm)	Weight lb(kg)
185A210000C	Type 1 Indoor	Steel	100	2	14.25(362)	24(610)	8.25(210)	44(20)
185A220000C	Type 1 Indoor	Steel	200	2	14.25(362)	24(610)	8.25(210)	44(20)
185A223000C	Type 1 Indoor	Steel	230	2	14.25(362)	24(610)	8.25(210)	44(20)
185A210000M	Type 3R Outdoor ^{1,2}	Aluminum	100	2	16(406)	24(610)	10(254)	49(22)
185A220000M	Type 3R Outdoor ^{1,2}	Aluminum	200	2	16(406)	24(610)	10(254)	49(22)
185A223000M	Type 3R Outdoor ^{1,2}	Aluminum	230	2	16(406)	24(610)	10(254)	49(22)

1. Type 3R enclosures provide a degree of protection against falling dirt, rain, sleet and snow. Additional protection may be required in locations subject to wind blown conditions.
2. Manual operating handle extends 2-1/2 inches on left side of enclosure.
3. QMQB manual operator is not available for 400 Amp rated switch.
4. See page 7 for optional features.

ASCO SERIES 185P Automatic Transfer Switch With Load Center

The ASCO 185P Power Transfer Load Center is a completely integrated package suitable for Residential applications. The 185P incorporates the SERIES 185 Automatic Transfer Switch with microprocessor controller. A Square D QO Load Center to accept branch circuit devices. And optional transient voltage surge suppression for protection of loads.

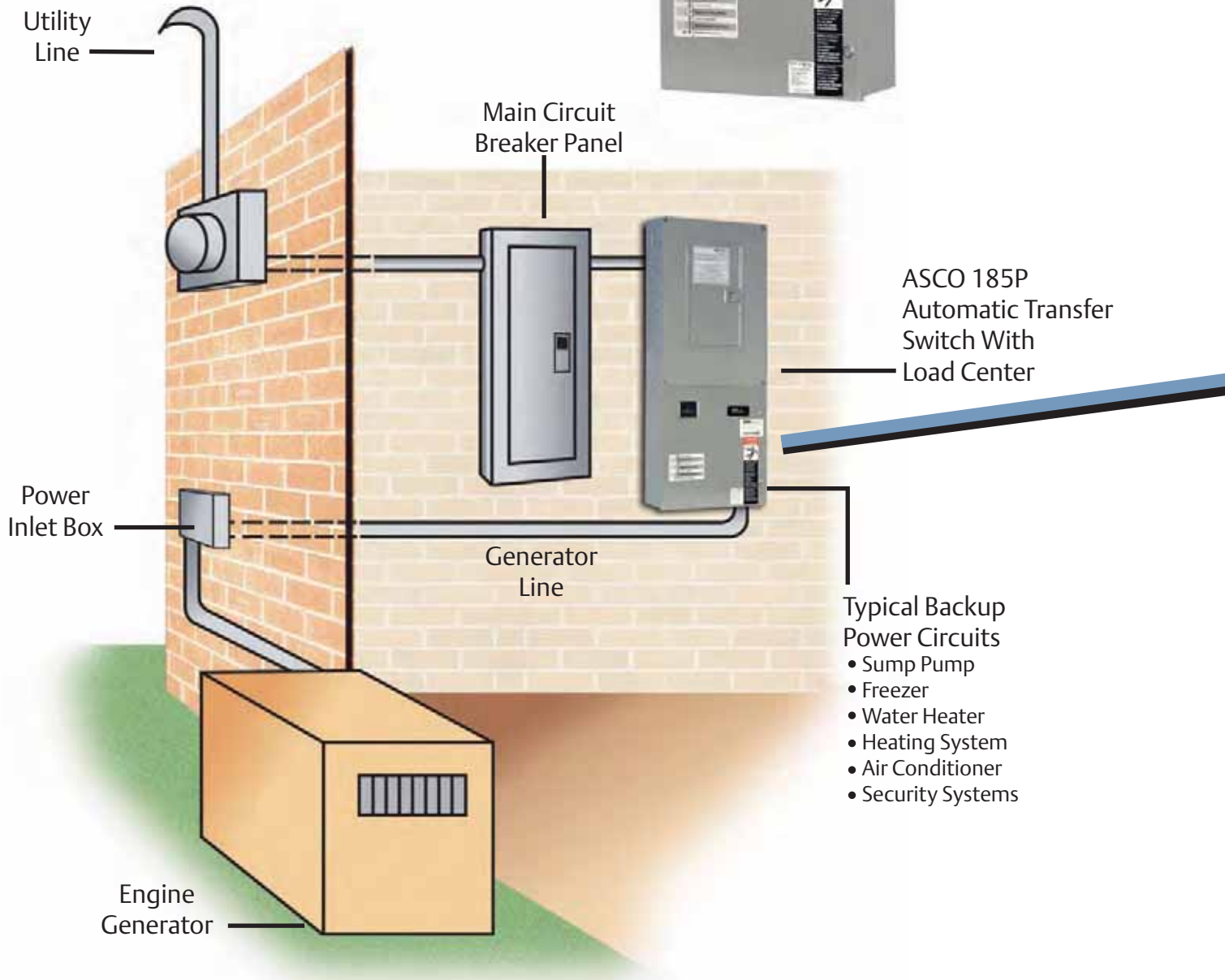
The ASCO SERIES 185P provides all the intelligence to automatically start your generator when the utility fails and transfer critical loads to standby power.

Available with 125 amp rating, 120/240 VAC, 60 Hz single phase, 3 wire.

The load center includes a 20 - position sub panel to facilitate ease of installation and maintenance.



ASCO SERIES 185P
Rated 125 Amps
in Type 1 indoor
(steel) enclosure



ASCO 185P Product Features

- Residential Load Center is listed UL 67
- Automatic Transfer Switch Rated 125 Amperes is listed to UL 1008 for optional standby systems
- True double-throw contacts eliminate simultaneous connection to utility and generator
- Test switch with time delay bypass option
- Convenient terminals to connect neutral and ground conductors from service and load feeders
- Generator exerciser timer
- All components are pre-wired and factory tested for easy installation
- Space saving modular design provides easy access and one-source service responsibility
- Available in Type 1 indoor (steel) enclosure
- Square D QO Load Center (branch breakers by others)

Optional Features

SQD Surge Breaker Secondary Surge Arrester¹

- Plug on design requires two pole spaces
- LED indicates operational status
- Available as a plug-in kit only for customer installation
- Specify kit K752139 For QO Load Center
- See page 7 for additional optional features

1. Surge protection devices will protect against electrical power surges caused by lightning or the electric utility for "major household appliances", but not sensitive electronic equipment. Electronic equipment may need additional protection by installing plug-in TVSS devices at the point of use.



Ordering Information

Catalog Number	Load Center	Circuits ²	Enclosure
185PQ22125F4C	QO	20	Type 1 Indoor (steel)

2. QO Branch Breakers supplied by others

External Power Connections

Switch Rating (amps)	Wire Size Range
125	(1) #14 to 4/0 AWG

185P Dimensions and Weights

Enclosure	Width in(mm)	Height in(mm)	Depth in(mm)	Weight lb(kg)
Type 1 (Indoor) steel	14.25(362)	36(914)	6(152)	46(21)

ASCO SERIES 185SE Service Entrance Power Transfer Switch

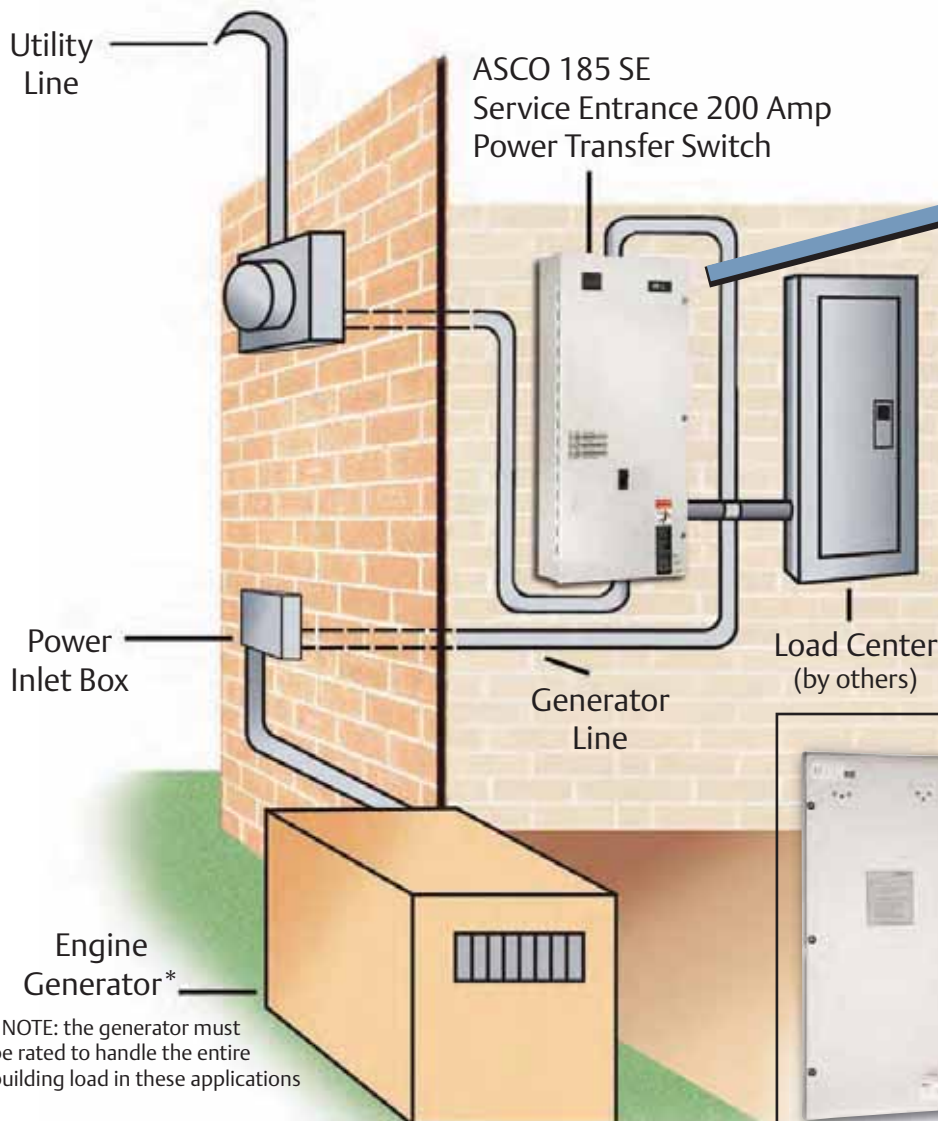
The ASCO 185SE Residential Service Entrance Power Transfer Switch combines the SERIES 185 automatic transfer switch with circuit breaker disconnect device for normal source. In addition, main jumper is provided to connect both the neutral and ground conductors in accordance with NEC requirements for service entrance equipment. The ASCO 185SE is suitable for use on Optional Standby Systems as defined by NFPA 70: National Electrical Code (NEC).

Service entrance rated transfer switches are generally installed at locations that have a single utility feed and a single emergency power source.

The ASCO 185SE Service Entrance Automatic Transfer Switch uses the same reliable transfer switching mechanism and controller as the SERIES 185 product platform.



ASCO 185 SE Service Entrance 400 Amp Power Transfer Switch in Type 1 indoor (steel) enclosure



ASCO 185SE also available in Type3R outdoor (aluminum) enclosure

ASCO 185SE Product Features



- Suitable for use as service entrance equipment
- The ASCO SERIES 185 is listed to UL 1008 for optional standby systems, and meets all NEC requirements for service entrance equipment
- 100, 200, and 400 Amp rating
- Circuit Breaker disconnect on the normal source for isolation of transfer switch and other electrical equipment
- Bonding jumper on Neutral and Ground
- Silver plated copper ground and neutral bus
- Solderless screw type terminals for External Power Connections
- Available in either UL approved Type 1 indoor (steel) enclosure or Type 3R outdoor (aluminum) enclosure.
- Available with a solid neutral
- Available with optional standby source breaker, specify 1APS
- See page 7 for additional optional accessories

SERIES 185SE AIC Rating

Switch Rating (amps)	AIC Rating @ 240V
100	10,000
200	10,000
400	35,000

Ordering Information

Catalog Number	Enclosure	Construction
1AUSA2100F4C	Type 1 Indoor	Steel
1AUSA2200F4C	Type 1 Indoor	Steel
1AUSA2400F4C	Type 1 Indoor	Steel
1AUSA2100F4M	Type 3R Outdoor ²	Aluminum
1AUSA2200F4M	Type 3R Outdoor ²	Aluminum
1AUSA2400F4M	Type 3R Outdoor ²	Aluminum

2. Type 3R enclosures provide a degree of protection against falling dirt, rain, sleet and snow. Additional protection may be required in locations subject to wind blown conditions

185SE Dimensions and Weights

Switch Rating	Enclosure	Poles	Width in(mm)	Height in(mm)	Depth in(mm)	Weight lb(kg)
100	Type 1 Indoor	2	16(406)	36(913)	6(152)	61(28)
200	Type 1 Indoor	2	16(406)	36(913)	6(152)	61(28)
400	Type 1 Indoor	2	36(913)	47(1193)	8(203)	177(82)
100	Type 3R Outdoor	2	16(406)	36(913)	8(203)	45(21)
200	Type 3R Outdoor	2	16(406)	36(913)	8(203)	45(21)
400	Type 3R Outdoor	2	36(913)	47(1193)	8(203)	144(67)

External Power Connections¹

Switch Rating (Amps)	Wiring Size Range
100	(1) #14 to 4/0 AWG
200	(1) #14 to 4/0 AWG
400	(2) 1/0 AWG to 250 MCM or (1) # 4 AWG to 600 MCM

1. UL listed for 200 or 230 amps with copper conductors only. For individual dwelling units as defined in NFPA 70 (NEC), in cases where the transfer switch is between the service main disconnect and the lighting and appliance branch circuit panelboard(s), NFPA 70 allows for a reduction in size of the feeder conductors. All other applicable requirements of NFPA 70 regarding conductor Ampacities must also be adhered to. Always install electrical equipment to the requirements defined by the authority having jurisdiction.

Integrated Power Transfer Solutions for Ease of Installation

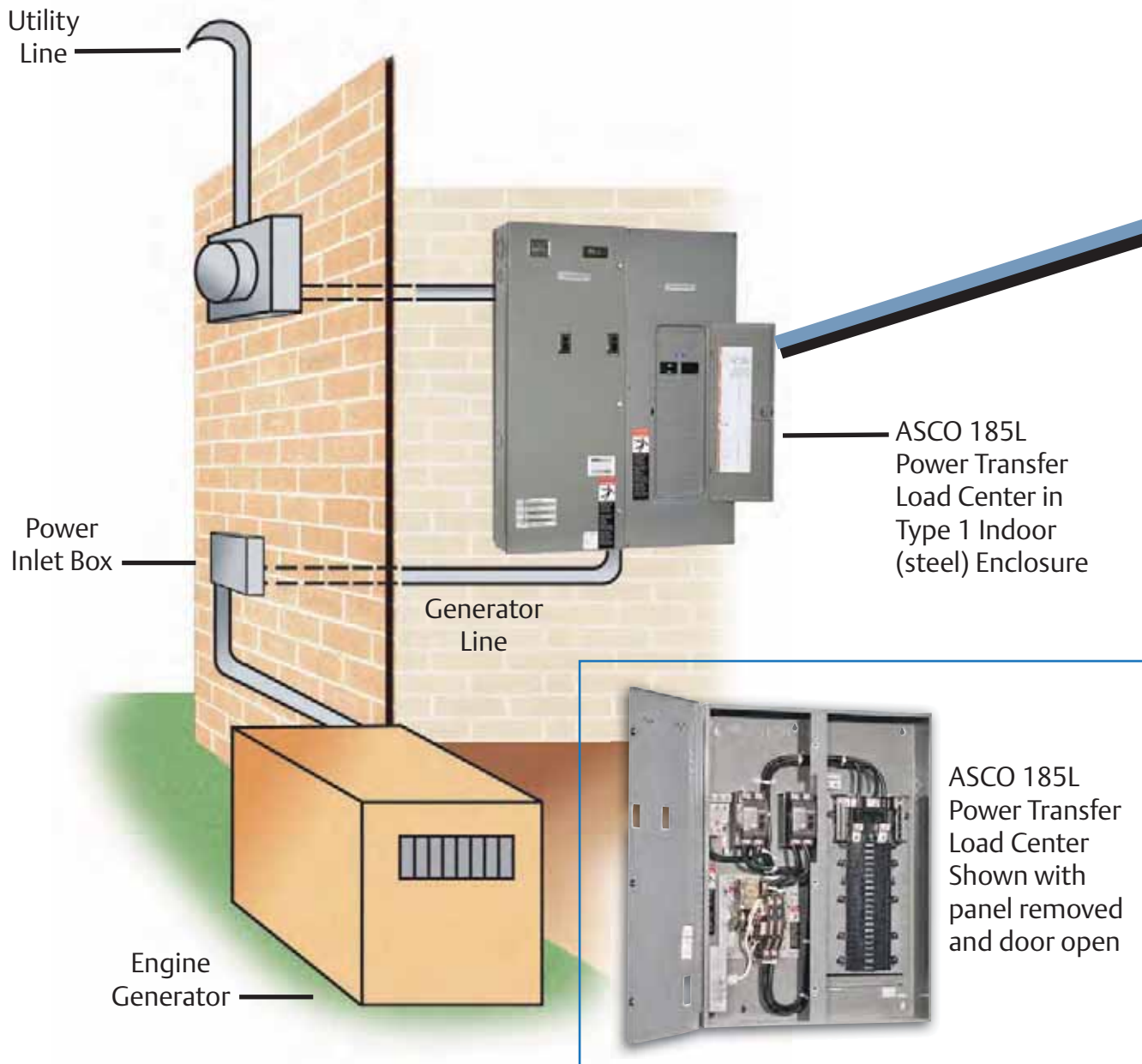
You can select from a comprehensive family of ASCO SERIES 185 power transfer switch products to satisfy the back up power requirements of virtually any residential or light commercial application. Whether you require stand-alone automatic or manual transfer switches, or total power transfer solutions integrated into single enclosures, ASCO offers exactly what you need. When you require an integrated solution, ASCO Power Transfer

Load Centers are available in configurations that can include a transfer switch, load panel, source breakers and voltage surge suppression. The choice is yours.

A completely integrated package which incorporates the SERIES 185 Automatic Transfer Switch with microprocessor controller. A Square D load distribution panelboard with utility and generator disconnect breakers. And optional tran-

sient voltage surge suppression for protection of load circuits. The ASCO SERIES 185L provides the intelligence and protection your generator needs in one complete package to insure automatic or manual transfer and continuous power when the utility fails.

Available with a 200 amp rating, 120/240 VAC 60 Hz single phase, 3 wire.





(left door cropped in photo to fit page)

Improved Design Features

- Dual compartment design isolates the load center from the automatic transfer switch providing additional safety benefits when new circuits are added
- Two separate doors reduce the door opening radius and provide added security against tampering
- Low profile design allows the load center to be mounted at eye level for convenience of operation, and ease of maintenance
- This design permits mounting high above ground level to avoid interference from ground water flooding
- The separate compartment design allows for more unobstructed space for wiring the load center

ASCO 185L Product Features

- Service Entrance Rated Residential Load Center is listed UL 67
- Automatic Transfer Switch Rated 200 Amperes is listed to UL 1008 for optional standby systems
- True double-throw contacts eliminate simultaneous connection to utility and generator
- Test switch with time delay override option
- Convenient terminals to connect neutral and ground conductors from service and load feeders
- Generator exerciser timer
- Pre-wired and factory tested for easy installation
- Space saving modular design provides easy access and one-source service responsibility
- Available in Type 1 indoor (steel) enclosure
- Square D (42) Circuit QO Load Center (branch breakers by others)
- Square D Utility and Generator Breakers

Optional Features

SQD Surge Breaker Secondary Surge Arrester¹

- Plug on design requires two pole spaces
- LED indicates operational status
- Available as kit only for customer installation
- Specify kit K752139 for QO load center
- See page 7 for additional optional accessories

1. Surge protection devices will protect against electrical power surges caused by lightning or the electric utility for "major household appliances", but not sensitive electronic equipment. Electronic equipment may need additional protection by installing plug-in TVSS devices at the point of use.

External Power Connections³

Switch Rating (Amps)	Wire Size Range
200	(1) #14 to 4/0 AWG

3. UL listed for 200 or 230 amps with copper conductors only. For individual dwelling units as defined in NFPA 70 (NEC), in cases where the transfer switch is between the service main disconnect and the lighting and appliance branch circuit panelboard(s), NFPA 70 allows for a reduction in size of the feeder conductors. All other applicable requirements of NFPA 70 regarding conductor ampacities must also be adhered to. Always install electrical equipment to the requirements defined by the authority having jurisdiction.

Ordering Information

Catalog Number	Load Center	Circuits ²	Enclosure
185L42200F4C	QO	42	Type 1 Indoor (steel)

2. QO Branch Breakers supplied by others

185L Dimensions and Weights

Enclosure	Width in(mm)	Height in(mm)	Depth in(mm)	Weight lb(kg)
Type 1 Indoor (steel)	28(726)	38(965)	6(152)	104(48)

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- Surge Protection

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