

# ASCO<sup>®</sup>

Surge Protective Devices

Installation & Operation Manual



*Model  
ACG*

**Model ACG**

# ASCO SURGE PROTECTIVE DEVICE INSTALLATION, OPERATION AND MAINTENANCE MANUAL

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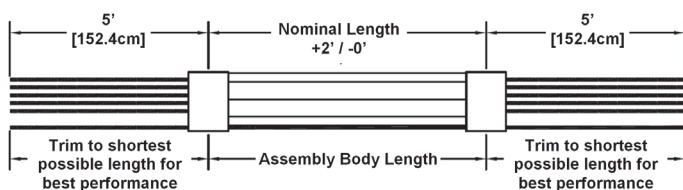
### Model Number Configurator

A C G



Configuration		Assembly Body Length <i>(not including the 5' pigtail length at each end of the body assembly)</i>		Wire Gauge	
<b>S111</b>	Single Phase, 3W+G (L1,L2,N,G)	<b>05</b>	5 Foot Body Length (15 feet total)	<b>04</b>	#4 AWG
<b>Y111</b>	Three Phase, 4W+G (L1,L2,L3,N,G)	<b>08</b>	8 Foot Body Length (18 feet total)	<b>06</b>	#6 AWG
<b>D110</b>	Three Phase, 3W+G (L1,L2,L3,G)	<b>10</b>	10 Foot Body Length (20 feet total)	<b>08</b>	#8 AWG
		<b>12</b>	12 Foot Body Length (22 feet total)	<b>10</b>	#10 AWG
		<b>15</b>	15 Foot Body Length (25 feet total)		
		<b>20</b>	20 Foot Body Length (30 feet total)		

### Dimensional Information



## INSTALLATION INSTRUCTIONS

All electrical connections shall be installed by a qualified (licensed) electrician. All wiring must comply with the National Electrical Code (NEC) and applicable local codes.

### National Electrical Code (NEC) Considerations

The National Electrical Code Article 240-21 details specific tap rules that should be considered before installation.

**NEC 240.21 Location in Circuit. Over current protection** shall be provided in each ungrounded circuit conductor and shall be located at the point where the conductors receive their supply except as specified in 240.21(A) through (G). No conductor supplied under the provisions of 240.21(A) through (G) shall supply another conductor under those provisions, except through an over current protective device meeting the requirements of 240.4.

(A) **Branch-Circuit Conductors.** Branch-circuit tap conductors meeting the requirements specified in 210.19 shall be permitted to have over current protection located as specified in that section.

(B) **Feeder Taps.** Conductors shall be permitted to be tapped, without over current protection at the tap, to a feeder as specified in 240.21(B)(1) through (5).

(1) **Taps Not Over 3 m (10 ft) Long.** Where the length of the tap conductors does not exceed 3 m (10 ft) and the tap conductors comply with all of the following:

(1) The Ampacity of the tap conductors (25 Amps in our case) is

- Not less than the combined computed loads on the circuits supplied by the tap conductors, and
- Not less than the rating of the device supplied by the tap conductors or not less than the rating of the over current protective device at the termination of the tap conductors.

(2) The tap conductors do not extend beyond the switchboard, panelboard, disconnecting means, or control devices they supply.

(3) Except at the point of connection to the feeder, the tap conductors are enclosed in a raceway, which shall extend from the tap to the enclosure of an enclosed switchboard, panelboard,

or control devices, or to the back of an open switchboard.

(4) For field installations where the tap conductors leave the enclosure or vault in which the tap is made, the rating of the over current device on the line side of the tap conductors shall not exceed 10 times the Ampacity of the tap conductor.

(2) **Taps Not Over 7.5 m (25 ft) Long.** Where the length of the tap conductors does not exceed 7.5 m (25 ft) and the tap conductors comply with all of the following:

(1) The Ampacity of the tap conductors is not less than one-third of the rating of the over current device protecting the feeder conductors (75 Amp maximum in our case).

(2) The tap conductors terminate in a single circuit breaker or a single set of fuses that will limit the load to the Ampacity of the tap conductors. This device shall be permitted to supply any number of additional over current devices on its load side.

(3) The tap conductors are suitably protected from physical damage or are enclosed in a raceway.

(3) **Taps Supplying a Transformer.** Not Applicable

(4) **Taps Over 7.5 m (25 ft) Long.** Not Applicable

(5) **Outside Taps of Unlimited Length.** Not Applicable

Flexible liquid tight non-metallic conduit in lengths greater than six feet must be installed in accordance with NEC 351-27.

### Connection

The ASCO Model ACG (AccuGuide) assembly is provided in standard lengths of 5, 8, 10, 12, 15, and 20 feet. Each end of the assembly will include an additional five feet of #10, 8, 6, or 4 AWG pigtails for connection to the service and to the surge protective device (SPD). Gauge of the pigtail is based on the SPD lug size. An additional 10 gauge grounding conductor is provided with the Model ACG assembly for use as an equipment ground.

## Conduit

The ASCO Model ACG (AccuGuide) assembly is sold without conduit. If conduit housing is required, the following conduit and fitting sizes apply:

# of Conductors	Conduit Size (in.)
1 Coax Cable, 1 GND	1"
2 Coax Cable, 1 GND	1-1/4"
3 Coax Cable, 1 GND	1-1/4"
4 Coax Cable, 1 GND	1-1/4"
5 Coax Cable, 1 GND	1-1/2"
6 Coax Cable, 1 GND	1-1/2"
7 Coax Cable, 1 GND	1-1/2"

The ideal SPD installation locates the suppression as close to the protected bus as possible. This product was designed to address those instances when a close installation is not possible. However, while the voltage drop experienced with a Model ACG assembly is significantly reduced, care should be taken to keep connection lengths to a minimum.

Each end of the ACG assembly is shipped with five-foot pigtailed. The length is offered as a worst-case need for the panel or switchgear end (our SPD will be much less than 5 feet). We recommend cutting the pigtail to the shortest length possible.

**Caution: Pigtails must be supported if pulling ACG assembly through conduit. Grip only the blue coaxial cable body when pulling the assembly through conduit. Do not pull ACG assembly using the pigtails or damage may occur.**

# ASCO®

## Surge Protection

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