AC/DC Accessory Panel Installation and Wiring Instructions

Model Number 423340
AC/DC Accessory Panel 7 Circuit - No Breakers

Model Number 423341
AC Accessory Panel 120 VAC 30 Amp Main Breaker + 3 Single Breakers

Model Number 423342
AC/DC Accessory Panel 5 Single Circuit Breakers

Read these instructions completely before starting assembly or installation.

The installation of this panel should be in accordance with the most current revision of U.S. Coast Guard 33CFR 183-1 and ABYC Standard E-9, Direct Current (DC) Electrical Systems on Boats or E-8, Alternating Current (AC) Electrical Systems on Boats. Standards may be obtained from:

Superintendent of Documents
Government Printing Office
Washington, D.C. 20402

33CFR 183 Subpart I

American Boat and Yacht Council
3069 Solomon's Island Road
Edgewater, MD 21037

Standards and Recommended Practices
For Small Craft

If these standards are unavailable or the installer is otherwise unsure of proper practice, seek competent professional assistance.

EVIDENCE OF FAULTY CONNECTION RESULTING IN COMPONENT DAMAGE WILL VIOLATE WARRANTY PROVISIONS. REVIEW INSTALLATION INSTRUCTIONS BEFORE STARTING INSTALLATION.

INSTALLATION:

Select an area that is as centrally located as possible to the functional operation of the craft.

DO NOT locate on a bulkhead backing up to a fuel or engine compartment.

DO NOT locate in an exposed area which receives direct water spray. (This principle applies to all electrical equipment).

Normally the panel is mounted on a bulkhead whose rear is accessible for wire installation. Where rear access is not possible, emphasis must be placed upon the use of flexible cables and conductors to permit the panel to be wired from the outside of the bulkhead. (For this you will need four #6 x 3/4" self-tapping screws to mount the panel).

Locate and drill the mounting holes and make the cutout for installation of the panel (see Fig. 1). Then secure the panel in place with four #6-32 . 1-1/4" machine screws and #6-32 hex nuts. When installation is being made in fiberglass, a backup strip of wood should be used.

CAUTION: Your A.C. Main Breaker is the primary link between the power inlet and the breaker panel. For safety always disengage the main breaker if you are working on the breaker panel or a branch circuit.

Use wire sized in accordance to the main breaker rating, (see Fig. 3). If any possibility of personal contact with rear of panel exists, provide a suitable cover or enclosure to guarantee safety.

D/C APPLICATION:

Panel Numbers 423340 & 423342

Once the panel is installed, connect the branch circuits as shown in Fig. 2. Three options are shown to wire the panel for D/C operation. (A) shows the connections for the use of a single battery system, (B) shows the connections for a dual battery system; (C) shows the connections for the use as an addition to an existing panel. (We recommend the use of Sea-Dog #423423 Master Panel without Battery Test).

All battery systems must be protected by an over-current protection device located in accordance with ABYC recommendations. Once all connections have been made, switch on the power to the panel and check each branch circuit for proper operation.

A main breaker trip indicates that a load combination which demands more power than can be permitted by the system is on line. Turn off all nonessential circuits, or time share as required, to permit the main breaker to be reset. An overload in a branch circuit will trip the circuit breaker. The breaker can only be reset after the fault has been corrected. Correct all faults immediately for your own safety.

When all circuits have been checked and are working properly, use your self-adhesive labels to identify each circuit

A/C APPLICATION, 30 AMP:

Panel Number 423341

This panel with 30 AMP double pole main breaker gives you the opportunity to combine a main breaker with branch circuits.

Once the panel has been installed, connect the branch circuits as shown in Fig. 4.

The main breaker is the primary link between the power inlet and the branch circuits. For safety always disengage the breaker if you are working on the breaker panel or branch circuit.

Using wire sized in accordance to the main breaker rating, (refer to Fig. 3) , connect incoming lines to the main breaker. Be sure to connect the green ground wire to all grounding terminals.

With the main breaker in the off position, no power is supplied to the branch circuits. If you are using shore power, you must check for the proper polarity before you engage the main breaker. If you find that you do not have proper polarity, reverse the shore leads. If this does not achieve proper polarity, the services of a competent technician should be engaged to correct the fault.

Once all connections have been made, switch on power to the panel and check each branch circuit for proper operation. An overload in a branch circuit will trip the circuit breaker. The breaker can only be reset after the fault has been corrected. All faults has been corrected. All faults must be corrected immediately for your own safety.

A main breaker trip indicates that a load combination which demands more power than can be permitted by the system is on line. Turn off all nonessential circuits, or time share as required, to permit the main breaker to be reset.

when all circuits have been checked and are working properly, use your self-adhesive labels to identify each circuit.

A/C APPLICATION:

Panel Numbers 423340 & 423342

Once the panel has been installed, connect the branch (see Fig. 4). Then connect the panel to the A/C power supply. (We recommend Sea-Dog #423132 Main Breaker; or Sea-Dog #423311 with #30 AMP Main Breaker; or Sea-Dog #423421 with 30 AMP Main Breaker Master Panel).

Refer to Fig. 3 to determine the proper wire size.

Once all connections have been made, switch on power to the panel and check each branch circuit for proper operation.

An overload in a branch circuit will trip the circuit breaker. The breaker can only be reset after the fault has been corrected. Correct all faults immediately for your own safety.

A main breaker trip indicates that a load combination which demands more power than can be permitted by the system is on line. Turn off all nonessential circuits, or time share as required, to permit the main breaker to be reset.

When all circuits have been checked and are working properly, use your self adhesive labels to identify each circuit.

THIS INSTRUCTION AND OPERATION DOCUMENT SHOULD BECOME PART OF THE BOAT OWNER'S MANUAL OR SHIPS PAPERS.

ALLOWABLE AMPERAGE OF CONDUCTORS FOR UNDER 50 VOLTS

CONDUCTOR SIZE ENGLISH(METRIC)	60 C 140 F		75 C 167 F		80 C 176 F		90 C 194 F		105 C 221 F		125 C 257 F		200 C 392 F
	Outside	Inside Engine Spaces	Outside	Inside Engine Spaces	Outside	Inside Engine Spaces	Outside	Inside Engine Spaces	Outside	Inside Engine Spaces	Outside	Inside Engine Spaces	Outside Inside Engine Spaces
18 (.8)	10	5.8	10	7.5	15	11.7	20	16.4	20	17.0	25	22.3	25
16 (1)	15	8.7	15	11.3	20	15.8	25	20.5	25	21.3	30	26.7	35
14 (2)	20	11.6	20	15.0	25	19.5	30	24.6	35	29.8	40	35.6	45
12 (3)	25	14.5	25	18.8	35	27.3	40	32.8	45	38.3	50	44.5	55
10 (5)	40	23.2	40	30.0	50	39.0	55	45.1	60	51.0	70	62.3	70
8 (8)	55	31.9	65	48.8	70	54.6	70	57.4	80	88.0	90	80.1	100
6 (13)	80	46.4	95	71.3	100	73.0	100	82.0	120	102.0	125	111.3	135
4 (19)	105	60.9	125	93.8	130	101.4	135	110.7	160	136.0	170	151.3	180
2 (32)	140	81.2	170	127.5	175	136.5	180	147.6	210	178.5	225	200.3	240
1 (40)	165	95.7	195	146.3	210	163.8	210	172.2	245	208.3	265	235.9	280
0 (50)	105	113.1	230	172.5	245	191.1	245	200.0	285	242.3	305	271.5	325
00 (82)	225	130.5	265	198.8	285	222.3	285	233.7	330	280.5	355	316.0	370
000 (81)	260	150.8	310	232.5	330	257.4	330	270.6	385	327.3	410	364.9	430
0000 (103)	300	174.0	360	270.0	385	300.3	385	315.7	445	378.3	475	422.8	510

Fig. 3

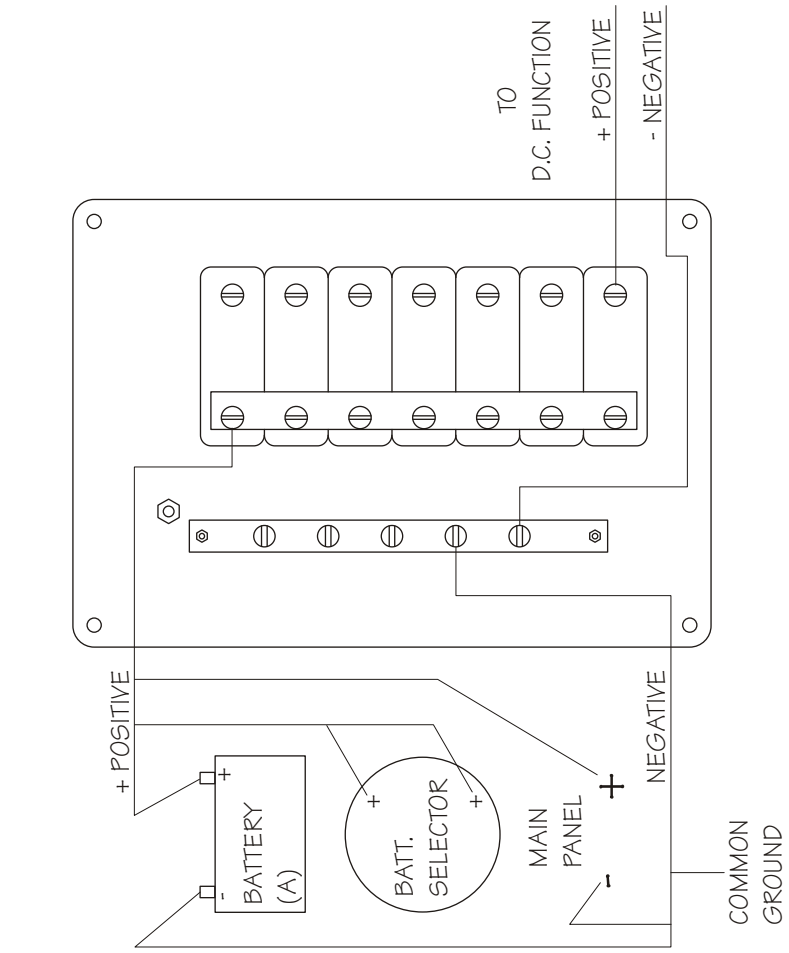
TO
D.C. FUNCTION
+ POSITIVE
- NEGATIVE
+ POSITIVE
BATTERY
(A)
BATT.
SELECTOR
MAIN
PANEL
NEGATIVE
COMMON
GROUND

Fig. 2

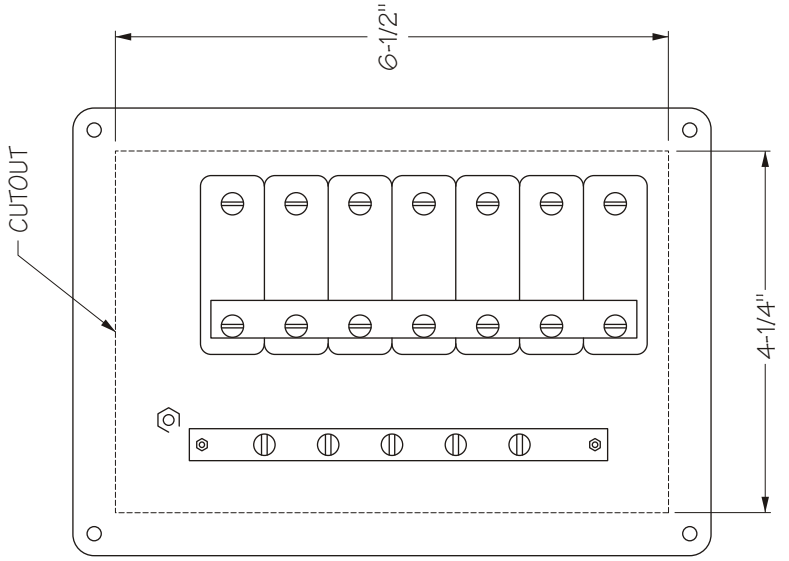
6-1/2"
CUTOUT
4-1/4"

Fig. 1

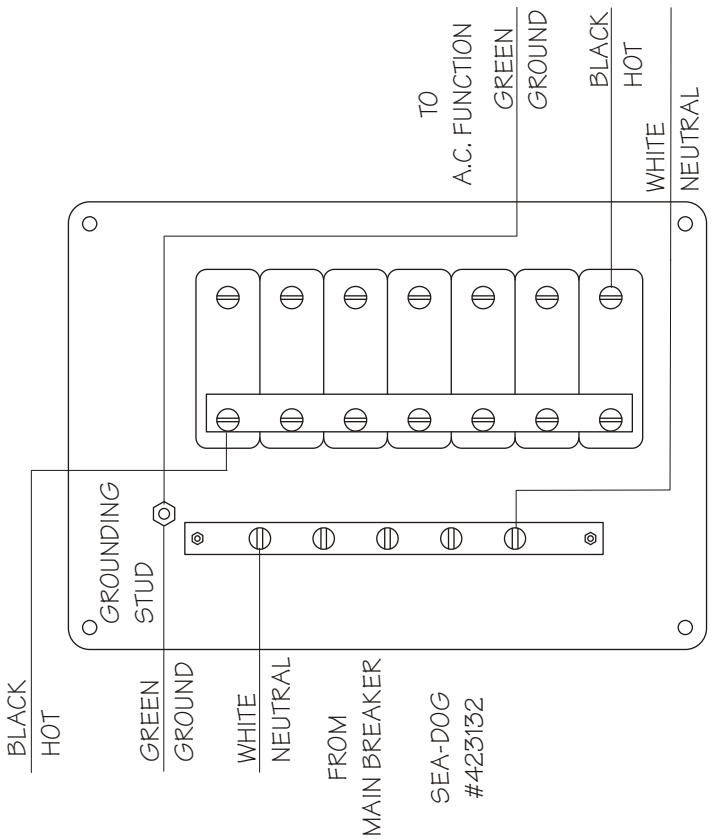
BLACK
HOT
GREEN
GROUND
WHITE
NEUTRAL
FROM
MAIN BREAKER
SEA-DOG
#423132
GROUNDING
STUD
TO
A.C. FUNCTION
GREEN
GROUND
BLACK
HOT
WHITE
NEUTRAL

Fig. 5

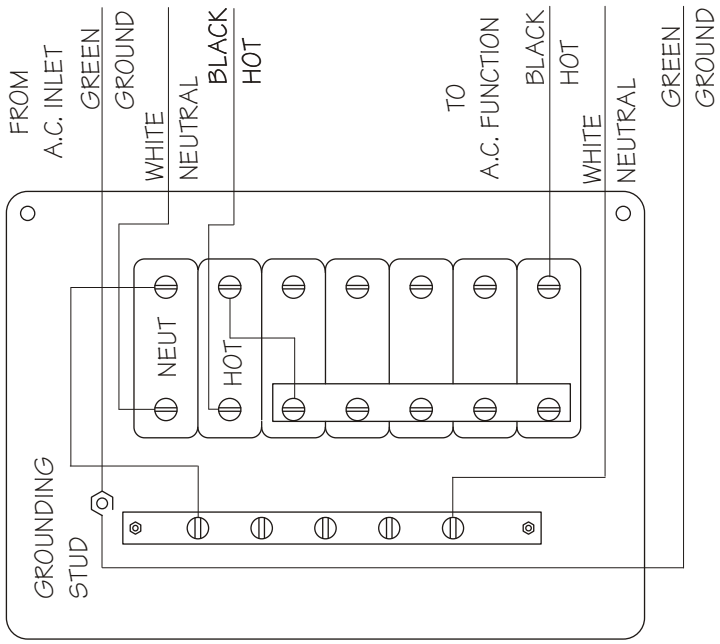
FROM
A.C. INLET
GREEN
GROUND
WHITE
NEUTRAL
BLACK
HOT
NEUT
HOT
GROUNDING
STUD
TO
A.C. FUNCTION
BLACK
HOT
WHITE
NEUTRAL
GREEN
GROUND

Fig. 4