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AVIONICS • INTERIOR • MAINTENANCE • PAINT REFINISHING

## SERVICE LETTER 112

### OPTIONAL HYDRAULIC POWER PACK TIMER RELAY INSTALLATION

<b>Aircraft Makes/Model(s):</b>	<b>Float Model(s):</b>	<b>Compliance:</b> Recommended	<b>By:</b> MAS
Aviat Husky, Cessna 170, 172, 175, 180, 182, 185, 206, 208, 208B Piper PA-18, PA-12, American Champion 8GCBC, Pilatus PC-6, DeHavilland DHC-2, DHC-3, Quest Kodiak 100	2100A, 2350A, 3000A, 3450A, 6100A, 7000A, 8000A, 8750A	<b>Part Number:</b> 1005052	<b>Approved:</b> DRH
		<b>Date:</b> 10/11/2023	<b>Revision:</b> G

FAA approval has been obtained for technical data in this publication that affects STC or TSO design compliance.

#### LOG OF REVISIONS

Revision	Description	Date
A	Initial release	1/15/2011
B	Transferred Service Kit 80 to Service Letter	5/31/2012
C	Updated work instructions.	4/9/2014
D	Removed Hydraulic Accumulator lines	5/21/2019
E	Updated warranty.	9/26/2019
F	Updated connector part numbers.	3/1/2022
G	Updated aircraft make and model and floats. Updated effectivity of STCs. Updated installation procedure instructions, electrical schematics and configuration table and parts list.	10/11/2023

#### EFFECTIVITY:

This service letter applies to all aircraft modified by STCs SA00637CH, SA00674CH, SA00713CH, SA00763CH, SA00804CH, SA00900CH, SA00901CH, SA01411CH, SA01156CH, SA01185CH, SA01320CH, SA01272CH, SA610GL, SA309CH, SA227CH, SA02848CH, and SA1311GL.

**Note:** Float installations from roughly 2012 and newer incorporate changes from this service letter. If the hydraulic pump cycles on for about 1 second every time the master switch is turned on, compliance with this service letter is not necessary.

#### COMPLIANCE:

Compliance with this service letter is optional, but recommended.

#### BACKGROUND:

Wipaire Engineering received several reports of hydraulic system malfunctions. Pressure lock of the system was determined to be the cause and adding this timer relay will enable the system to function as designed. This is a recommended product enhancement by Wipaire Engineering to improve the function of the hydraulic system.

#### COMPLIANCE METHOD:

Install parts in accordance with instructions in this service letter.

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**APPROX. SHOP HOURS:**

This Service Letter will take approximately 1-3 labor hours, based on aircraft configuration.

**WARRANTY INFORMATION:**

This service letter does not include warranty for parts and labor.

**TECHNICAL DATA:**

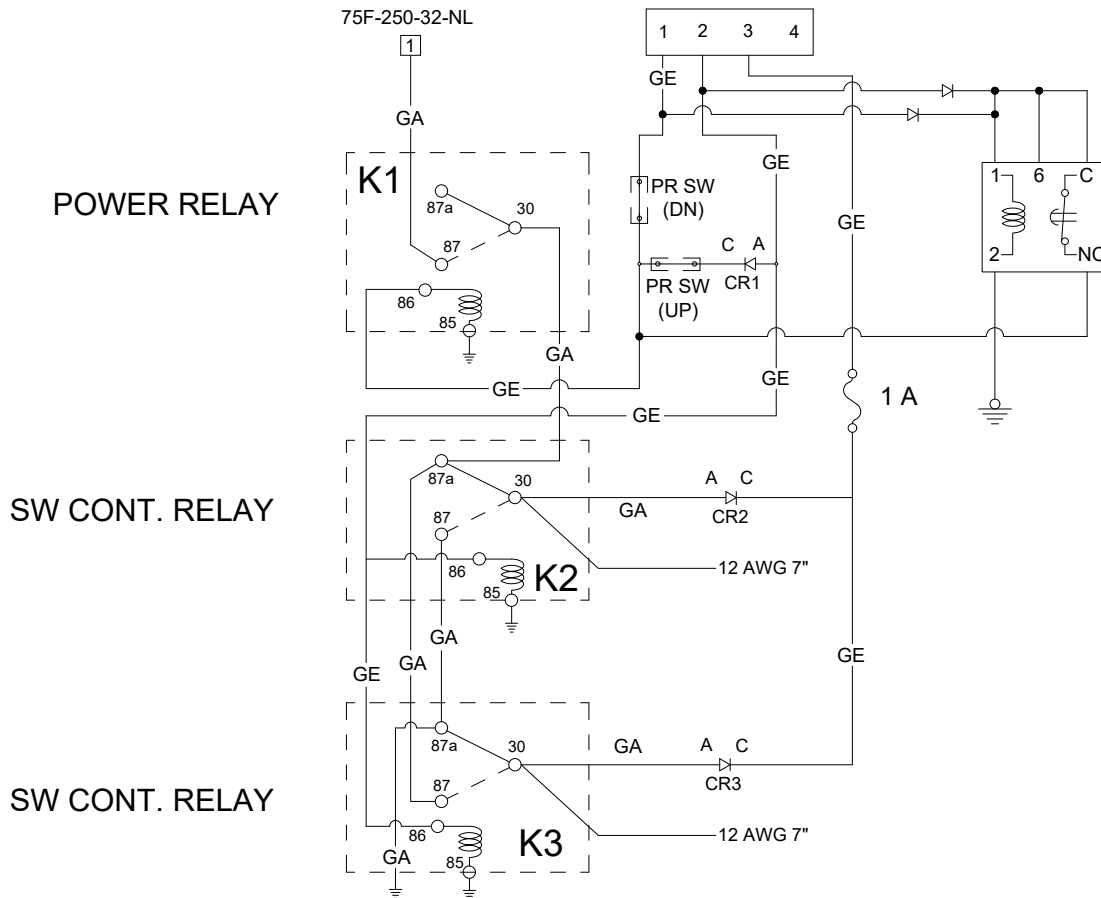
Copies of this service letter, float service manual, modification drawing, and float parts manual are available on the website [www.wipaire.com](http://www.wipaire.com).

For basic Float model maintenance information, see Wipaire applicable Service Manual on website [www.wipaire.com](http://www.wipaire.com).

For basic Float model parts information, see applicable Wipaire Parts Manual on website [www.wipaire.com](http://www.wipaire.com).

**INSTALLATION PROCEDURE**

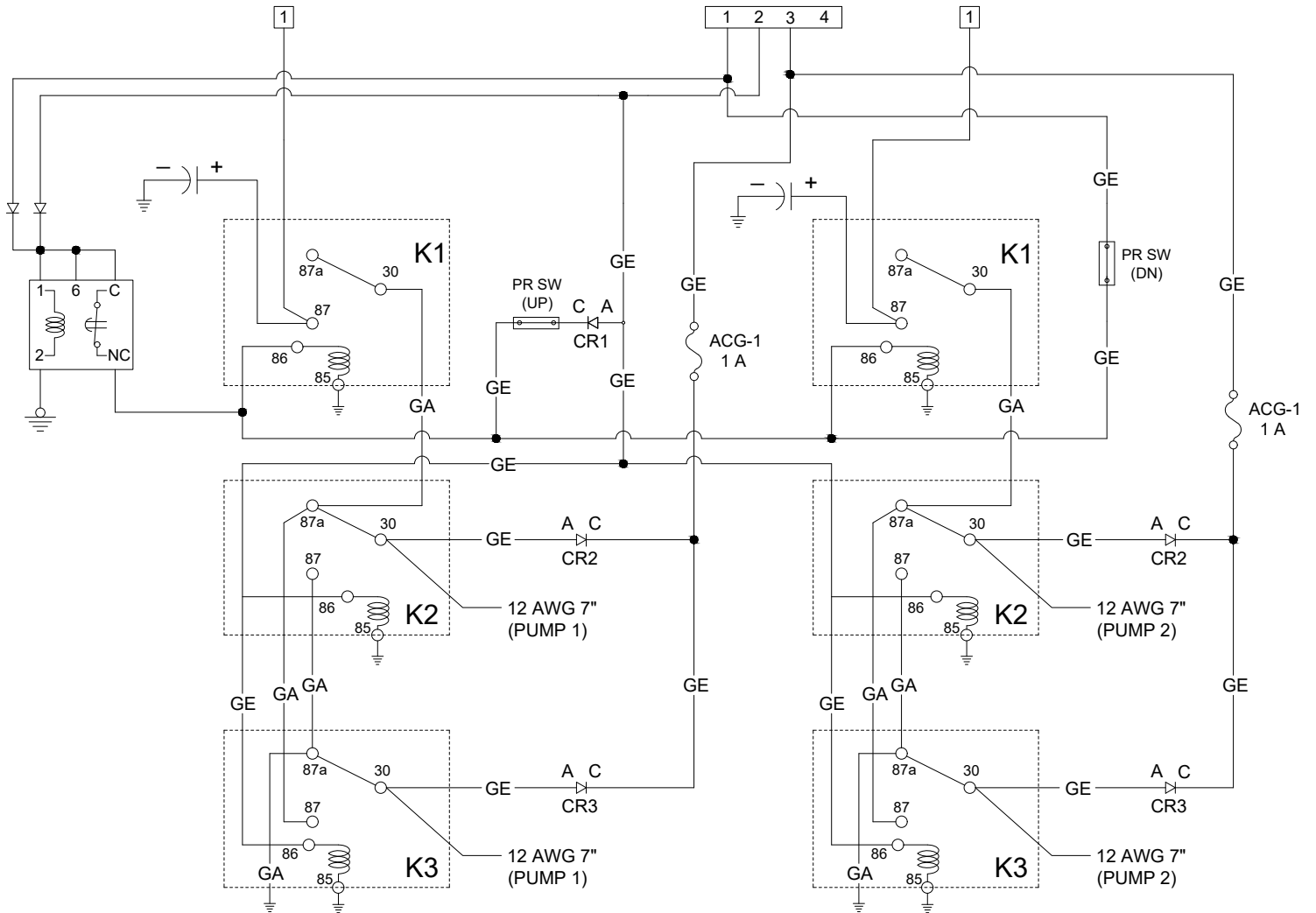
1. Although it is possible to complete work with the hydraulic pump installed in the aircraft, it is recommended that the hydraulic pump is removed from the aircraft for easier access.
2. Remove backshell from three-wire round plug on pump side of connection.
  - a. Cut back heat shrink 1" from plug end.
  - b. Remove pin 1 from round connector.
    - i. Cut off pin and strip insulation back on removed wire and one of the wires coming from terminals 1 and 4 from one of the timer delay relays. (It doesn't matter which relay.)
    - ii. Using pin 66099-4 crimp both wires together in the pin and reinstall into pin 1 location in plug.
  - c. Remove pin 2 from round connector.
    - i. Cut off pin and strip insulation back on removed wire and the wire coming from terminals 1 and 4 from the other timer delay relay.
    - ii. Using pin 66099-4 crimp both wires together in the pin and reinstall into pin 2 location in plug.
  - d. Reinstall backshell onto three-wire round plug
3. Disconnect two-wire molex plug on down pressure switch. (Down pressure switch is labeled "DN" in the pump casting at the hydraulic fittings.)
  - a. Remove pin 1 from molex housing. (Pin 1 is the pin in the pointed end of plug.)
    - i. Cut off pin and strip insulation back on this wire and the wire coming from #3 terminals from the timer delay relay assembly.
    - ii. Using 02-09-1117 crimp both wires together in the pin and reinstall into molex housing pin 1.
  - b. Reconnect down pressure switch
4. Connect the wire from #2 terminals from the timer delay relay assembly to ground using MS25036-102 terminal ring or equivalent.
5. Mount the timer delay relay assembly to an available space on the hydraulic pump mount. Use 1012412 bracket for proper fit if needed.
6. If removed, reinstall hydraulic pump in aircraft.
  - a. Bleed all air from hydraulic system.
    - i. Removal of hydraulic accumulators is optional if previously installed.
7. Put aircraft on stands and perform a gear retraction/extension test to make sure the system is functioning correctly.
  - a. To test timer relay:
    - i. With gear and selector in down position, turn master switch on. Pump should run for two seconds. Put gear in up position. Let gear retract all the way up and stop then turn master switch off.
    - ii. With the gear and selector in up position, turn master switch on. Pump should run for two seconds. Put gear in down position and let gear extend down. Turn master switch off.
  - b. Remove aircraft from stands.



# ELECTRICAL SCHEMATIC

**CONFIGURATION -01 SINGLE PUMP WIRING SCHEMATIC**  
 (RELAYS SHOWN IN RELAXED CONDITION)

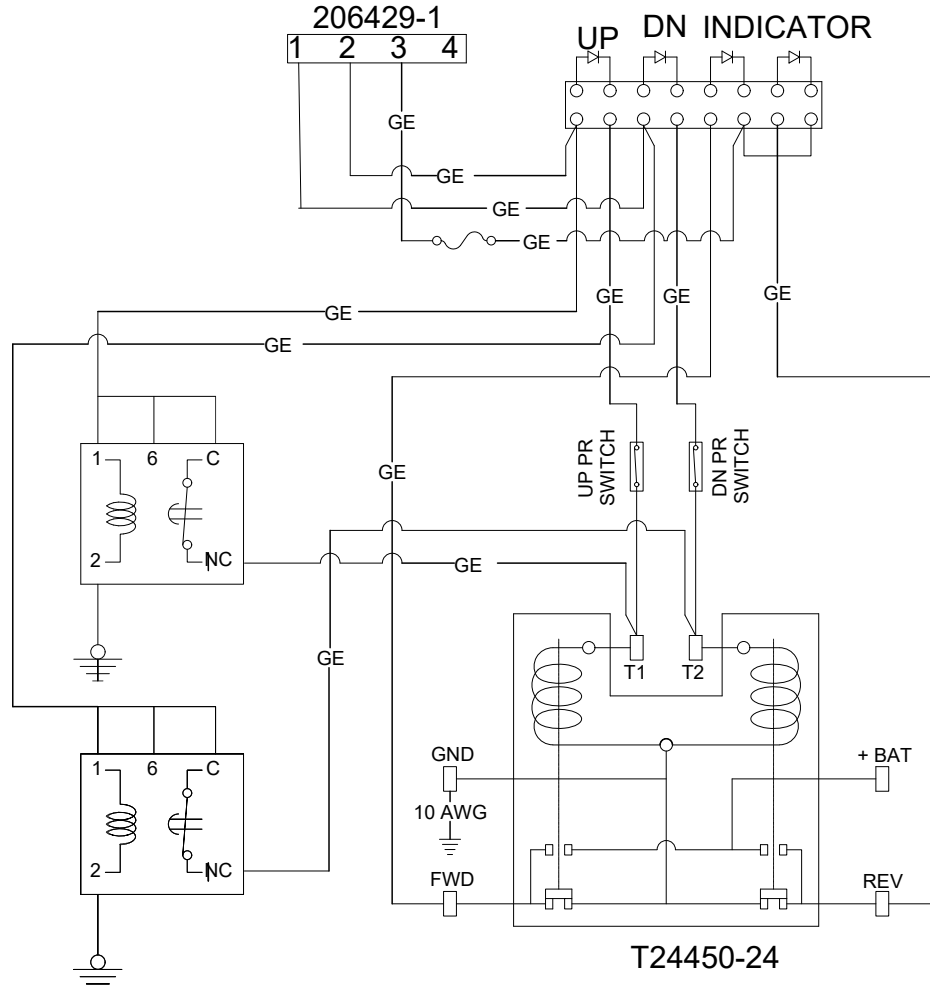
1. GE WIRES 20 GA
2. GA WIRES 12 GA



# ELECTRICAL SCHEMATIC

**CONFIGURATION -01 DUAL PUMP WIRING**  
 SCHEMATIC  
 (RELAYS SHOWN IN RELAXED CONDITION)

1. GE WIRES 20 GA
2. GA WIRES 12 GA



# ELECTRICAL SCHEMATIC

**CONFIGURATION -02 SINGLE PUMP WIRING  
 SCHEMATIC  
 (RELAYS SHOWN IN RELAXED CONDITION)**

1. GE WIRES 20 GA
2. GA WIRES 12 GA

### CONFIGURATION TABLE

CONFIGURATION	DESCRIPTION
-01	ALL BI-DIRECTIONAL HYDRAULIC PUMPS (NOT DHC2)
-02	DHC2, WITH BI-DIRECTIONAL HYDRAULIC PUMP

### PARTS LIST

ITEM	QTY -01	QTY -02	P/N	DESCRIPTION
1	0	2	1012399	RELAY, TIME DELAY RELEASE, 6-48 VDC
2	1	0	1012411	ASSEMBLY, RELAY, TIME DELAY RELEASE, 6-48 VDC
3	0	10	71F-250-32-NL	CRIMP DICONNECT, FEMALE, FULLY INSULATED, 18-22 AWG
4	1	0	1012412	BRACKET, RELAY, HYDRAULIC PUMP
5	1	1	AN4-11A	BOLT, 1/4-28, 0.6875 GRIP, UNDRILLED
6	0	1	AN4-14A	BOLT, 1/4-28, 1.0625 GRIP, UNDRILLED
7	1	1	MS21083N4	NUT, LOCKING, LOW HEIGHT, 1/4-28
8	1	1	NAS1149D0463J	WASHER, 0.265 I.D., 0.063 THK, ALUMINUM
9	1	1	MS25036-102	RING TERMINAL, #6 STUD, 16-22 AWG, RED
10	0	5 FT	22759-16-20-9	WIRE, 20 AWG, WHITE
11	2	2	66099-4	CRIMP PIN MALE

## Aircraft Closing & Return to Service

1. Upon completion of inspection, enter information in Aircraft Logbook for completion of Wipaire Service Letter 112.