9038-893
SERVICE
BULLETIN

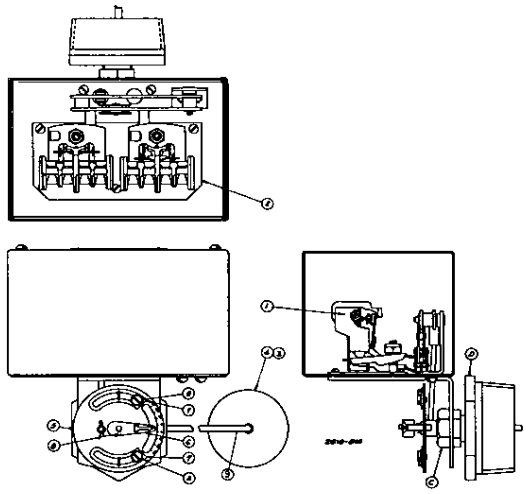
Class 9038 Type CG Series A MECHANICAL ALTERNATOR

CAUTION: Switches are shipped with a bracket attached to the mounting plate. This bracket prevents the float and rod from moving in the tank during shipment. When installing the system, this clearly marked shipping bracket must be removed and discarded.

APPLICATIONS: The Class 9038 Type C Mechanical Alternators serve to open and close an electric circuit by an upward and downward float movement. The forces are applied by means of a float operating between different liquid levels. The action is such that two switch units are alternated on successive cycles. If the liquid level continues to rise or fall with one pump in operation, the lever will continue to travel to a further position at which point the "second" switch will be operated, throwing the stand-by pump across the line.

MOUNTING: The Class 9038 Type C Mechanical Alternators are mounted directly to the tank by means of the 2½" NPT threaded fitting (D). Before screwing this fitting into the tank, loosen Nut (C) so that the fitting (D) is free to rotate in the switch bracket. Tighten the fitting (D) so that there will be no leak past the threads. Then revolve the switch case until it is horizontal and tighten Nut (C).

PRESSURE: In the use of the CG Alternators, the pressure limit within the closed tank must not exceed 100 psi.



ELECTRICAL RATINGS (HORSEPOWER)

Voltage	Single Phase AC	Polyphase AC	DC
115	2HP	3HP	½HP
230	3HP	5HP	½HP
460/575		1HP	
32			¼HP

Control Circuit Rating: A600

REVERSE OPERATION: Form R controls are arranged for reverse action. In this form, the contacts will open on increase in liquid level. It is not recommended that a change be made in the field from standard to reverse operation or vice versa.

MANUAL TRANSFER (LEAD-LAG) SELECTOR: Form N3 switches have a manually engaged selector which voids alternation. The pump selected to lead always comes on first. With selector disengaged, the unit reverts to normal alternation.

MOTOR PROTECTION: A control of this type does not afford motor protection. However, it is quite frequently used as a pilot to operate a starter providing this desirable feature. The Square D Company manufactures a complete line of motor protective devices, information on which will be sent upon request.

ENCLOSURE RATING: NEMA 1 ENCLOSURES ARE INTENDED FOR INDOOR USE PRIMARILY TO PROVIDE A DEGREE OF PROTECTION AGAINST CONTACT WITH THE ENCLOSED EQUIPMENT IN LOCATIONS WHERE UNUSUAL SERVICE CONDITIONS DO NOT EXIST.

WARNING: TO AVOID SHOCK HAZARD, DISCONNECT ALL POWER BEFORE INSTALLING OR SERVICING DEVICE.

ADJUSTMENTS: Switches are shipped from the factory set for a specified float travel. Reasonable adjustment of float travel can be made in the field by moving adjusting strips (7) which are held in place by Screws (A) and (B). Loosening Screw (B) and moving upper adjusting strip (7) will affect the upper limit of float travel only. Loosening Screw (A) and moving lower adjusting strip (7) will affect the lower limit of float travel.

REPLACEMENT PARTS LIST

Item Number	Description	Number Req'd.	Part Number
1	Set of Movable and Stationary Contacts	2	9998 PC-242
2	Switch Mechanism CG Types (including Form R)	1	1551-C7-G1
3	Float (304 SS)	1	9049 HF3
4	Float (316 SS)	1	9049 HF4
5	Adjusting Plate Assembly	1	2810-D7-G1
6	Operating Lever	1	65079-042-01
7	Adjusting Strip	2	2810-X8
8	Set Screw	1	21801-14080
9	4¼" Connector and Rod Assy.	1	2810-C3-G19
9	5" Connector and Rod Assy.	1	2810-C3-G18
9	7" Connector and Rod Assy.	1	2810-C3-G6
—	Seal and Installation Kit (Buna-N)	1	9998 PC-337
—	Seal and Installation Kit (Viton)	1	9998 PC-338

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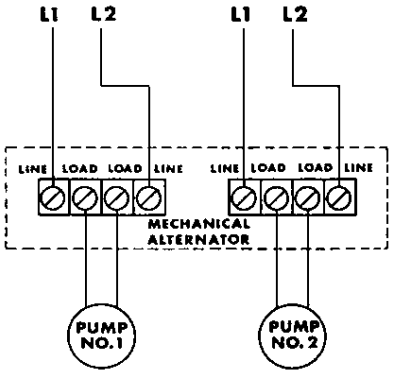
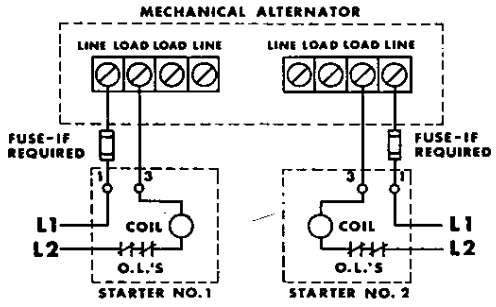
***WHERE SEPARATE POWER SUPPLIES ARE PROVIDED THE DISCONNECT MEANS FOR EACH MOTOR MUST BE GROUPED TOGETHER AND PROVIDED WITH SUITABLE WARNINGS IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND ALL OTHER APPLICABLE CODES AND STANDARDS.**

CLASS 9038 MECHANICAL ALTERNATOR - WIRING DIAGRAMS*



SINGLE PHASE MOTOR CONTROL



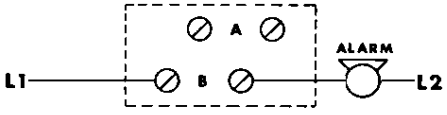
AC OPERATION OF MOTOR STARTERS

C65016-004-33

ELECTRICAL RATING OF ALARM SWITCH ONLY
CLASS 9007 TYPE AO1

AC PILOT DUTY		
VOLTS	BREAK	MAKE
110	15A	40A
220	10A	20A
440	6A	10A
600	5A	8A

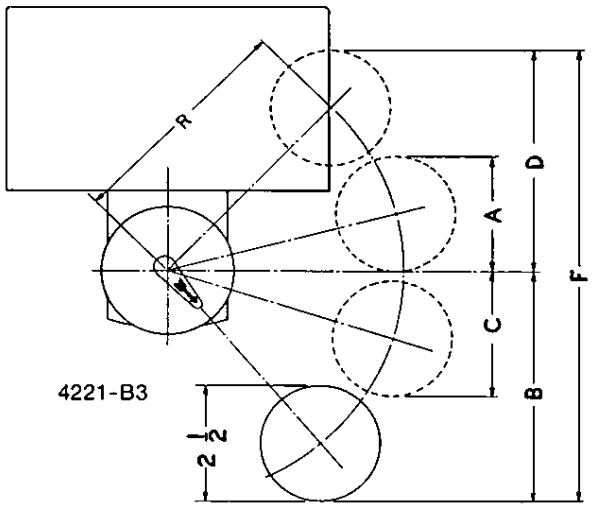
D.C. PILOT DUTY SINGLE THROW			
VOLTS	115	220	600
AMPS	0.5 A	0.25A	0.05A
DOUBLE THROW			
VOLTS	115	220	600
AMPS	0.25A	0.1	—



CIRCUIT A CLOSES ON FALLING LIQUID LEVEL
CIRCUIT B CLOSES ON RISING LIQUID LEVEL
(SWITCH CONTACTS MUST BE SAME POLARITY)

FORM N5 HIGH LEVEL ALARM

C65016-004-33



EXPLANATION OF FLOAT TRAVEL AND POSITION

NORMAL OPERATION: Switches will cut in and cut out at the high point and low point of distance A plus B, given in the tables. Under normal conditions, as long as one pump alone is able to handle the incoming water, the pumps will alternate at this distance. With the water level continuing to rise, the second switch will cut in and start the second pump when the float reaches the top of distance D. Both pumps will continue to run until the float returns to the low point of distance D plus C, where one pump will cut out. The other pump will continue until the float reaches the low point of distance B.

Type CG