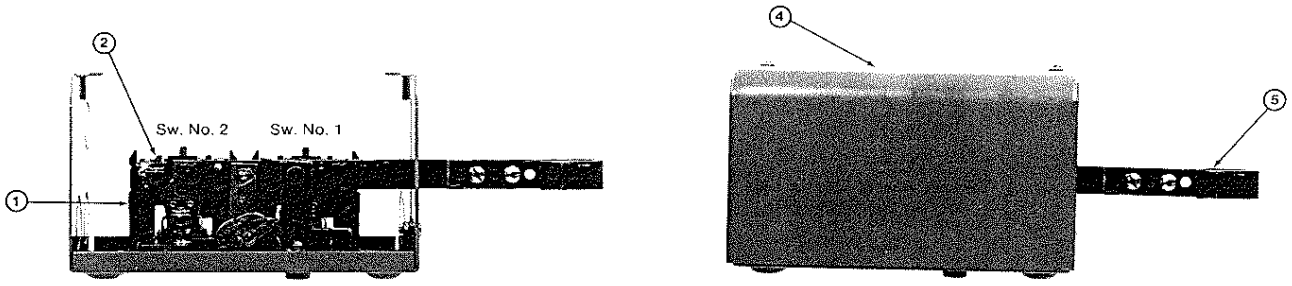
847AS
SERVICE
BULLETIN

Class 9038 Types AG-1

MECHANICAL ALTERNATOR



REPLACEMENT PARTS

Item Number	Description	Nbr. Req'd	Part Number
1	Switch mechanism AG (including Form R)	1	1551-C7-G1
2	Set of movable and stationary contacts (Includes all attaching parts)	2	9998 PC 242
	Compensating spring	1	9049 A15
4	Replacement cover (specify complete class and type number)	1	1551-S13-G1
5	Float rod guide assy	1	1091-S18-G1

When ordering replacement parts, always give complete Nameplate data.
NOTE: Float accessories are not included on AG.

INSTRUCTIONS

WARNING — To avoid shock hazard, disconnect all power before installing or servicing device.

APPLICATION — A means of mechanically alternating the operation of two pumps installed in a duplex system with a common tank. Under peak conditions, both pumping units are automatically placed in operation.

STANDARD ACTION — Contacts close on liquid rise.

REVERSE ACTION — Contacts open on liquid rise. IT IS NOT RECOMMENDED THAT A CHANGE BE MADE IN THE FIELD FROM STANDARD TO REVERSE ACTION OR VICE VERSA.

FLOAT ROD GUIDE — This guide can be adjusted to increase the standard length of the lever arm a minimum of 3 1/2 inches to a maximum of 4 3/16 inches. See Fig. 1.

ADJUSTMENT — The alternators are pre-set at the factory for proper operation. Adjustments should not be attempted.

COMPENSATING SPRING FORM C — When the weight of the rod and stops plus the force up to trip excedes the buoyancy of the float, a compensating spring and a center hole float must be used.

Adjustment — (a) Mount the tubing complete with stop collars, (less float) on the arm.

(b) Place the lever arm in the upward position. Adjust the tension so the lever is maintained in this position.

(c) Place the lever arm in the downward position. Adjust the tension so the lever remains in this position.

(d) Check b and c.

Results — The float must be buoyant enough to trip the switch up and have weight enough to trip the switch down.

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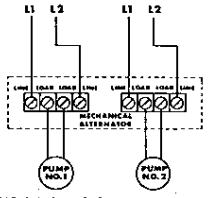
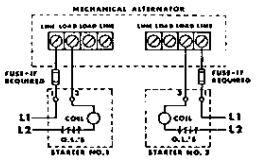
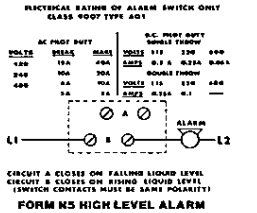
CLASS 9038 MECHANICAL ALTERNATOR - WIRING DIAGRAMS*



SINGLE PHASE MOTOR CONTROL



AC OPERATION OF MOTOR STARTERS



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
FIG. 2

*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

ELECTRICAL RATINGS

Voltage	Single Phase AC	Polyphase AC	DC
115	2 H.P.	3 H.P.	½ H.P.
230	3 H.P.	5 H.P.	½ H.P.
460/575	—	1 H.P.	—
32	—	—	¼ H.P.

Contact Circuit Rating: NEMA 600A

APPROXIMATE DIMENSIONS

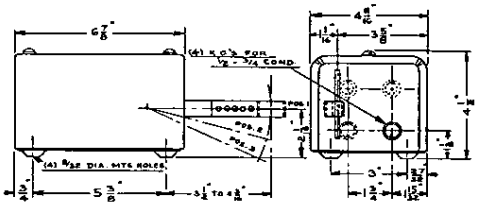


Fig. 1

The alternating of two pumps takes place at position 2. Position 1 is reached only when one pump is unable to control the liquid level.

TABLE OF OPERATING FORCES

FOR AID IN THE SELECTION OF FLOAT AND ROD IF NOT USING SQUARE D ACCESSORIES OR IF ADDITIONAL TUBING IS TO BE USED WITH CLASS 9049 A-6 ACCESSORIES.

Type	Without Comp. Spring (No. Form C)		Maximum Weight of Tubing and Stops That Can Be Supported By Compensating Spring (Form C)	Length of Rod Which Can Be Supported with Compensating Spring at Max. Adjust.		
	Force UP •	Force Down		‡ Brass	‡ Stainless Steel	‡ Aluminum
AG-1 (Min. Lever Ext.)	18 oz.	20 oz.	40 oz.	10 ft.	12 ft.	25 ft.
AG-1 (Max. Lever Ext.)	16	17	41	8	10	21
AG-1 Form R (Min. Lever Ext.)	14	16	33	7	8	17
AG-1 Form R (Max. Lever Ext.)	11	12	30	6	7	15

‡ Rod length has been determined using weight of rod material furnished on Class 9049 accessories (3/8" O D tubing) Other types of rod should be weighed and compared to weight of tubing column in the table above.
• Add 2 oz. for Form N5 High Water alarm.

MANUAL TRANSER (LEAD-LAG) SELECTOR FORM N3 — These switches have a manually engaged selector which voids alternation. When the N3 lever is lifted up and positioned to the left, the pump controlled by Switch No. 2 will lead and Switch No. 1 will lag. By lifting up on the lever and swinging it to the right, Switch No. 1 will lead and Switch No. 2 will lag. Placing the lever in its mid position returns the control to normal alternator operation.

NON-ALTERNATING MECHANISM (FORM N4) — On these alternators, the pump wired to lead (which is Switch No. 1) always comes on first with the second pump operating only under peak conditions or when first pump fails.

HIGH WATER ALARM (Form N5) — On these switches an additional snap switch mechanism is tripped initiating a high water alarm circuit if for any reason both pumps are unable to control the rising of liquid in the tank. See Fig. 2.

MOUNTING — The alternator is mounted in a horizontal position by means of the four holes located in the base of the frame.

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. Square D Company manufactures a complete line of motor protective devices, information on which will be sent upon request.