D-c Magnetic Controllers — For Use on Surface Vessels (Continued)

Description (Continued)

Overload protection is provided by the use of an adjustable thermal overload relay on sizes 0 to 3 inclusive, and by the use of an adjustable magnetic overload relay of the automatic reset type on size 4 controllers and larger. The thermal overload relay is manually reset from the exterior of the enclosing case by depressing the "reset" button.

Controllers for adjustable speed motors on which the speed increase by field control does not exceed 50 per cent above the full field speed, do not include field accelerating relays. Where the speed increase by field control exceeds 50 per cent above normal full field speed, a field accelerating relay is used; and on the larger controller ratings where the field accelerating relay cannot handle the field direct, a field contactor is used in addition to the field accelerating relay.

All insulation used in the construction of the various controller components, except for the operating coils, is of the mineral filled (MF) or glass melamine (GMG) type which is satisfactory to meet the requirements under Class B insulation. Shunt type operating coils for the various components are of Class A construction, vacuum impregnated.

Reversing type controllers consist essentially of the same components used on non-reversing controllers plus a set of reversing contactors. The reversing contactors are mechanically and electrically interlocked.

Non-reversing dripproof controllers, size 0, 1, 2 and 3, can be furnished with local control mounted in and/or operated from the front cover of the enclosure. Other controllers are usually provided with a fused pilot circuit and arranged for operation from remote master stations. Additional pilot circuit fuses may be required and specified for external circuits to pilot lights, accessories, etc.

The control panel either of sheet steel or insulated construction is arranged to be easily removed from the enclosing case. Controllers are provided with either dripproof or spraytight enclosures; and these are arranged for bulkhead or deck mounting, as determined by the size of the controller.

TABLE OF CONTROLLER CONTACTOR AND RELAY NUMBERS

		*NON-REVERSING CONTROLLERS FOR ★ CONSTANT SPEED MOTORS												
		Main Line Contactor					Single Pole Intermediate Accelerating Contactors			Single Pole Final Accel. Contactor			Series Accel. Relays	
Navy Starter Size	No. of Resistor Steps (Accel. Contactors)	Contactor Type No.	No. of Contactors Furnished	No. of Poles Per Contactor	Nominal Ampere Rating	Type No. of Magnetic Latching Relay	Contactor Type No.	No. of Contactors Furnished	Nominal Ampere Rating	Contactor Type No.	Nominal Ampere Rating	Overload Relay Type Number	Relay Type Number	No. of Relays Furnished
0	0	N868	1	2	25	†	†	†	†	†	†	N750	†	†
1	Δ1	N868	1	2	25	†	†	†	†	N369	50	N750	†	†
2	2	N869	1	2	50	†	N389	1	50	N389	50	N750	N175	2
3	2	N700	1	2	100	†	N369	1	50	N540	100	N750	N175	2
4	3	N701	1	2	150	†	N369	2	50	N541	150	N709	N175	3
5	4	N642	2	1	300	N621	N540	3	100	N542	300	N709	N175	4
6	4	N545	2	1	600	N621	N541	3	150	N545	600	N709	N175	4
7	4	N546	2	1	1200	N621	N542	3	300	N546	1200	N709	N175	4

* Reversing Controllers use same contactors and relays and in addition require one set of reversing contactors (either two double pole or four single pole contactors) of the same design and rating as the main line contactor.

★ For adjustable speed motors on which the speed increase by field control exceeds 1½ to 1, a type N131 field accelerating relay is supplied to provide full field starting. When the shunt field current exceeds the rating of the N131 relay, a type N369 contactor is used with the relay to provide full field starting. Size and number of intermediate accelerating contactors may be affected.

Δ Size 1 starter uses counter EMF type of acceleration.

† None required.

Continued

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