



DESCRIPTION • OPERATION • MAINTENANCE INSTRUCTIONS

REVERSING *Life-Linestarter*^{*} TYPE N SIZE 2 CLASS 11-210N.2 2 PHASE 4 POLE

TYPE N REVERSING LIFE-LINESTARTER will give protection for overloads (but not against short circuit currents) when wired in accordance with Fig. 2 and provided with overload heaters selected from the Heater Application Tables.

The starter should be protected against short circuits by fuses not exceeding four times the rated motor current, by a time limit circuit breaker set at not more than four times the full load motor current or by an instantaneous trip circuit breaker.

For use with a-c motors, the following table of ratings applies.

MAXIMUM HORSEPOWER RATINGS FOR A-C MOTORS WHEN PROVIDED WITH SUITABLE O.L. RELAY HEATERS

VOLTS	110	208-220	440-600
MAXIMUM HORSEPOWER (Polyphase)	7½	15	25

STARTER IDENTIFICATION

This LINESTARTER complete is identified by style (shown on carton and as listed in Price List) and consists of two basic parts: (1) the starter unit including overload relays, and (2) the coils.

The style number of the starter unit (with overload relays but without coils) is S#1577 459 and appears on the metal nameplate attached to unit.

The coil style is marked on the coil itself along with its voltage and frequency rating.

Style identification for use in ordering either a complete LINESTARTER or individual coils is given in the following table:

STYLE IDENTIFICATION

VOLTS	CYCLES	COIL STYLE	COMPLETE STYLE
110	60	1470 221	1578 861
110 208 220	25 60 60	1470 222	1578 862
220 380 440 480	25 50 60 60		
550 600 110 220	60 60 50 50		
		1470 223	1578 863
550 600 110 220	60 60 50 50	1470 224 1470 225 1470 226 1470 227	1578 864 1578 865 1578 866 1578 867
440 550 440 550	50 50 25 25	1470 228 1470 229 1470 230 1470 231	1578 868 1578 869 1578 870 1578 871

INSTALLATION

1. Clean the magnet surfaces.
2. Operate the armature by hand to be sure that all moving parts move freely.
3. The overload heaters are shipped in a separate carton. First check the heater marking (adjacent mounting holes) against the Heater Application Tables to see that the full load current marking of the motor nameplate comes within the current range of the heater. Install heater as shown in Fig. 1, making sure that heater mounting screws are tight.

OVERLOAD RELAY

The overload relay may be set for Automatic reset, Hand reset or Hand reset with no manual means of opening the contacts. "Automatic" reset should not be used with two wire master switch. The type of operation is determined by the position of the control spring in the notches of the pushrod on the opposite side of the relay from the side the heater is inserted. The relay is furnished with the control spring set in the "Hand" reset position. The respective operations are indicated by "Auto", "Hand" and "No Stop" as lettered on the back side of the relay.

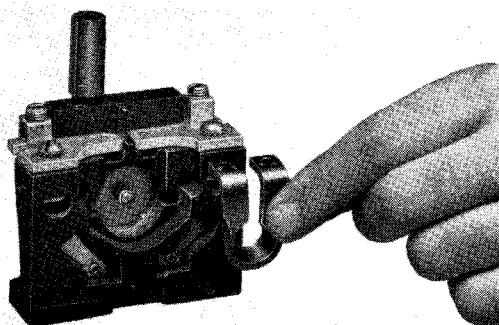


FIG. 1. Thermal Overload Relay, Showing Heater and Installation Method

ELECTRICAL INTERLOCKS

This starter comes equipped with *one* normally open interlock on each contactor. A *second* interlock for each contactor may be obtained by ordering either S#1314 888, normally open, or S#1314 889, normally closed. A *third* interlock per contactor may be had by ordering either S#1314 890, normally open, or S#1314 891, normally closed. The above normally open interlocks may readily be installed as normally closed interlocks per instructions enclosed with each interlock.

MAINTENANCE

The sealing surfaces on the magnet frame and armature should be kept clean.

Do not lubricate the contact tips or bearings. Fine silver contacts need no dressing throughout their life.

To Remove Contactor Coil, remove the three Hex head magnet mounting bolts and withdraw the coil and magnet.

When Installing Contactor Coil, make sure that Hex head magnet mounting bolts are securely tightened.

The bimetallic disc trip unit of the overload relay has been carefully calibrated at the factory and should not be disturbed. In case of damage remove complete relay unit and replace with complete unit.

PRINCIPAL RENEWAL PARTS

Contactor Moving Contact..... S# 1224 773
 Contactor Stationary Contact..... S# 1224 774
 Contactor Contact Spring..... S# 1221 426
 Overload Relay Complete..... S# 1577 064

For other parts refer to Renewal Parts Catalog

HEATER APPLICATION TABLES

HEATER STYLE NUMBER	HEATER CODE MARKING	TABLE 18 RELAY AMBIENT APPROX. SAME AS MOTOR AMBIENT		TABLE 19 RELAY AMBIENT APPROX. 15° ABOVE MOTOR AMBIENT	
		125% Overload Protection Full Load Current of Motor (Amperes)	Heater Current Rating (Amperes)	125% Overload Protection Full Load Current of Motor (Amperes)	Heater Current Rating (Amperes)
1129 372	X 49	0.45 to 0.49	.56	.39 to .43	.49
1129 373	Y .55	0.50 to 0.56	.63	.44 to .49	.55
1129 374	Z .63	0.57 to 0.62	.72	.50 to .56	.63
966 465	AA .71	0.63 to 0.71	.79	.57 to .65	.71
966 466	AB .82	0.72 to 0.79	.90	.66 to .73	.82
966 467	AC .93	0.80 to 0.89	1.00	.74 to .81	.93
966 468	AD 1.0	0.90 to 0.99	1.13	.82 to .92	1.00
966 469	AE 1.1	1.00 to 1.04	1.25	.93 to 1.02	1.16
966 470	AF 1.2	1.05 to 1.18	1.31	1.03 to 1.07	1.29
966 471	AG 1.4	1.19 to 1.32	1.49	1.08 to 1.21	1.35
966 472	AH 1.5	1.33 to 1.49	1.66	1.22 to 1.36	1.53
966 473	AI 1.7	1.50 to 1.71	1.88	1.37 to 1.53	1.71
966 474	AK 1.9	1.72 to 1.89	2.15	1.54 to 1.76	1.93
966 475	AL 2.1	1.90 to 2.09	2.37	1.77 to 1.95	2.22
966 476	AM 2.5	2.10 to 2.35	2.63	1.96 to 2.15	2.44
966 477	AN 2.7	2.36 to 2.65	2.95	2.16 to 2.42	2.71
966 478	AO 3.0	2.66 to 2.98	3.32	2.43 to 2.73	3.02
966 479	AP 3.4	2.99 to 3.35	3.74	2.74 to 3.07	3.42
966 480	AR 3.8	3.36 to 3.75	4.20	3.08 to 3.45	3.85
966 481	AS 4.3	3.76 to 4.21	4.73	3.46 to 3.86	4.32
966 482	AT 4.8	4.22 to 4.71	5.28	3.87 to 4.33	4.87
966 483	AU 5.4	4.72 to 5.33	5.91	4.34 to 4.85	5.43
966 484	AW 6.1	5.34 to 5.94	6.67	4.86 to 5.49	6.09
966 485	AX 6.8	5.95 to 6.63	7.44	5.50 to 6.13	6.86
966 486	AY 7.7	6.64 to 7.52	8.30	6.14 to 6.83	7.65
966 487	AZ 8.5	7.53 to 8.51	9.41	6.84 to 7.74	8.54
966 488	BA 9.6	8.52 to 9.31	10.6	7.75 to 8.75	9.69
966 489	BB 11	9.32 to 10.5	11.64	8.76 to 9.57	10.96
966 490	BC 12	10.6 to 11.5	13.09	9.58 to 10.8	11.90
966 491	BD 13	11.6 to 12.4	14.50	10.9 to 11.3	13.50
966 492	BE 14	12.5 to 13.4	15.6	11.4 to 12.8	14.90
966 493	BF 16	13.5 to 14.9	16.9	12.9 to 13.8	16.10
966 494	BG 18	15.0 to 17.5	18.7	13.9 to 15.4	17.40
966 495	BH 19	17.6 to 18.2	20.3	15.5 to 16.8	19.25
966 496	BI 21	18.3 to 19.0	22.5	16.9 to 18.4	20.90
966 497	BK 23	19.1 to 20.5	23.9	18.5 to 19.5	23.18
966 498	BL 25	20.6 to 22.6	25.9	19.6 to 21.3	24.60
966 499	BM 27	22.7 to 25.7	28.4	21.4 to 23.3	26.7
1040 588	BN 29	25.8 to 28.4	32.5	23.4 to 24.9	29.0
974 084	BO 31	28.5 to 32.7	35.5	25.0 to 28.4	31.0
1040 589	BR 36	32.8 to 36.4	41.4	28.5 to 32.2	36.0
1040 590	BS 40	36.5 to 42.5	46.5	32.3 to 36.2	40.0
1265 536	BT 47	42.6 to 49.0	54.0	36.3 to 40.9	46.0
1265 537	BU 54	49.1 to 55.5	62.0	41.0 to 46.5	52.0
1265 538	BX 61	55.6 to 61.0	70.0	46.6 to 51.9	59.5
1265 539	BY 65	61.1 to 65.2	74.7	52.0 to 56.7	65.0
1265 540	BZ 71	65.3 to 71.0	81.5	56.8 to 61.7	71.0

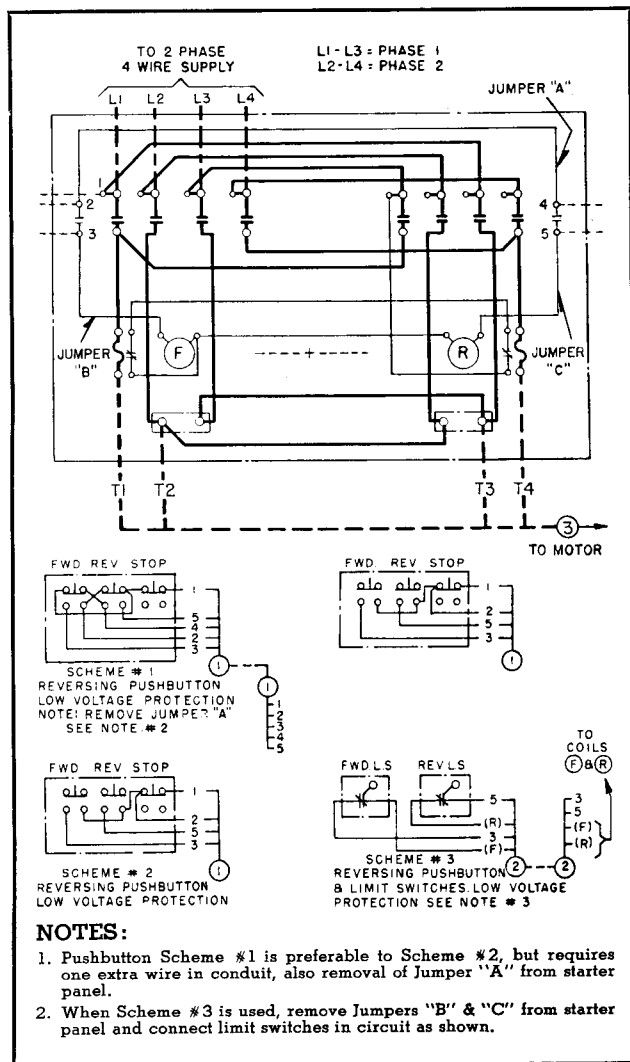


FIG. 2. Wiring Diagram of Linestarter and Connections to Master Switches



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BEAVER PLANT • STANDARD CONTROL DIVISION • BEAVER, PA.