V★S® DRIVES

INSTRUCTION SHEET D-3961-1

MinPak/FlexPak
Blower Motor Starter Kits
Model Numbers 14C509, 14C510, 14C511, 14C520, 14C521, 14C522, 14C523
For Controllers 2–20 HP @ 230 VAC, 5–40 HP @ 460 VAC

DANGER

ONLY QUALIFIED ELECTRICAL PERSONNEL FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF THIS EQUIPMENT AND THE HAZARDS INVOLVED SHOULD INSTALL, ADJUST, OPERATE AND/OR SERVICE THIS EQUIPMENT. READ AND UNDERSTAND THIS MANUAL IN ITS ENTIRETY BEFORE PROCEEDING. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN SEVERE BODILY INJURY OR LOSS OF LIFE.

DESCRIPTION

THE PRODUCTS DESCRIBED IN THIS INSTRUCTION MANUAL ARE MANUFACTURED BY RELIANCE ELECTRIC INDUSTRIAL COMPANY.

These kits provide starters to control, protect and interlock the 3-phase A-C motor used for cooling a force ventilated D-C motor.

Each starter kit includes a 3-pole magnetic starter with adjustable overload, 3 Class CC Type CCMR fuses, a wiring harness and mounting hardware. Figure 1 provides a schematic of the starter.

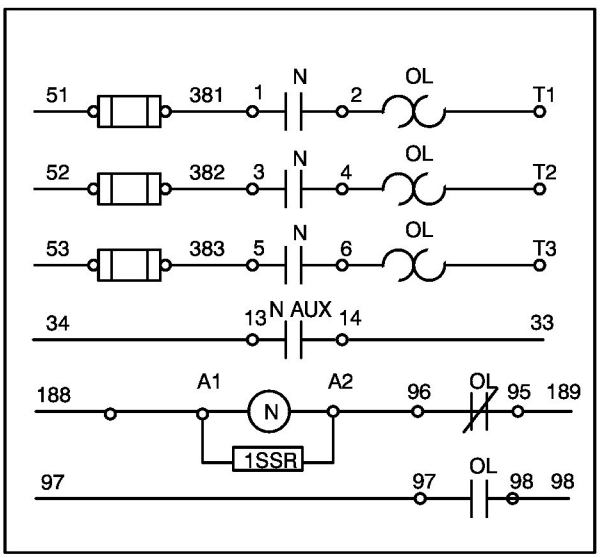

Figure 1 – Blower Motor Starter Kit Schematic

OPERATION

Blower motor control is provided by means of a magnetically operated 3-phase motor starter. The starter coil receives power from the MinPak Plus/FlexPak Plus control circuit transformer and, as such, the starter closes with application of plant power to the input of the drive and drops out upon removal of plant power.

Overload protection for the A-C motor is provided by means of three adjustable overloads mounted within the starter. Overload trip will cause the blower motor starter to open.

Short circuit protection is provided by means of three Class CC Type CCMR fuses wired in series with power feed to the A-C motor and mounted as part of the starter assembly.

A normally open auxiliary contact on the starter (terminals 33 and 34) allows interlocking with the drive to stop the drive motor upon an A-C motor overload trip. A normally open auxiliary contact on the starter (terminals 97 and 98) allows the user to monitor the status of the blower motor starter and to alarm a “blower motor starter open” condition.

SPECIFICATIONS

Coil Voltage ..... 115 volts A-C, 50/60 Hz.
Power Contact Rating .... 21 amperes full load, at up to 600 volts A-C
Fuse Rating ..... Per Table 1 for short circuit protection of the A-C motor and wiring

Overload Data:

Overload Selection ..... Per Table 1

RELIANCE ELECTRIC

Table 1
Overload Data

Model Number	Adjustable Overload Setting (Amps)	Fuse Rating	Fuse Part Number
14C509	.4 – .63	.8	64676-72C
14C510	.63 – 1.0	1.25	64676-72E
14C511	1.0 – 1.4	2.0	64676-72H
14C520	1.4 – 1.8	2.5	64676-72J
14C521	1.7 – 2.4	3.5	64676-72L
14C522	2.2 – 3.1	4.5	64676-72N
14C523	2.8 – 4.0	6.0	64676-72R

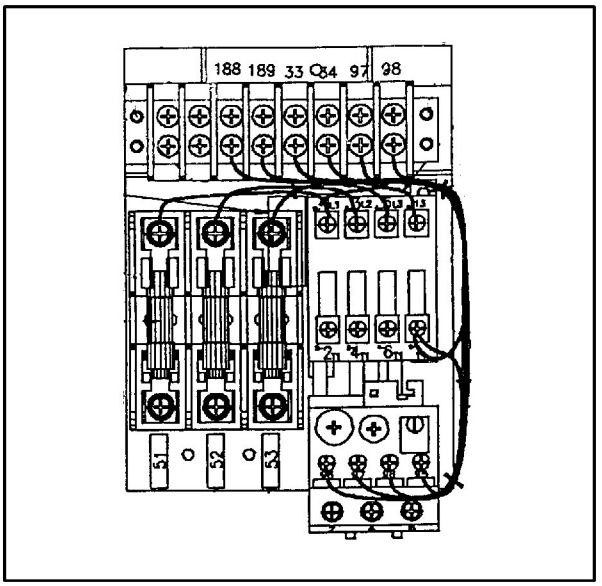

Figure 2 – Blower Motor Starter Kit

SELECTING THE CORRECT BLOWER MOTOR STARTER KIT

The following table is provided for the recommended matching of Blower Motor Starter Kits to Motor Blower Kits.

Table 2
Blower Motor Kit / Blower Motor Selection

Super RPM Drip-Proof Frame Size	Blower Kit Model Number	Recommended Starter Kit 3-Phase Power, 60 Hz	
		230 Volt A-C	460 Volt A-C
B180ATZ	417077-51	14C520	14C510
B210ATZ	417077-52	14C520	14C510
B250ATZ	417077-53	14C520	14C510
B280ATZ	417077-54	14C520	14C510
B320ATZ	417077-55	14C520	14C510

MOUNTING LOCATION

MinPak Plus – Mounting location for the blower motor starter kit on the MinPak Plus:

- Front location to left of circuit breaker on the auxiliary chassis circuit breaker mounting plate (Figure 3).

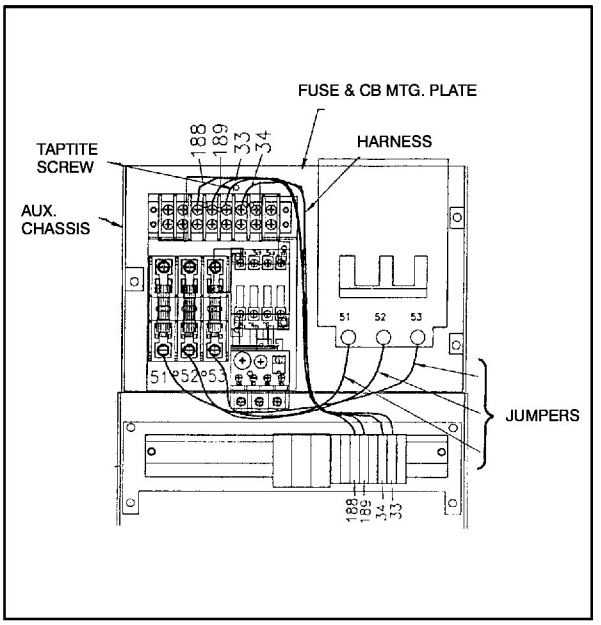

Figure 3 – MinPak Plus with Blower Motor Starter Kit

FlexPak Plus – Mounting location for the Blower Motor Starter Kit on the FlexPak Plus:

- Front location to right of incoming A-C line fuses on the auxiliary chassis fuse/circuit breaker mounting plate. Refer to figure 4.

If circuit breaker kit is present then blower motor starter kit must be remotely mounted from FlexPak Plus auxiliary chassis.

INSTALLATION INSTRUCTIONS

DANGER

THIS EQUIPMENT IS AT LINE VOLTAGE WHEN A-C POWER IS CONNECTED TO THE CONTROLLER. DISCONNECT ALL UNGROUNDED CONDUCTORS OF THE A-C POWER LINE FROM THE CONTROLLER. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN SEVERE BODILY INJURY OR LOSS OF LIFE.

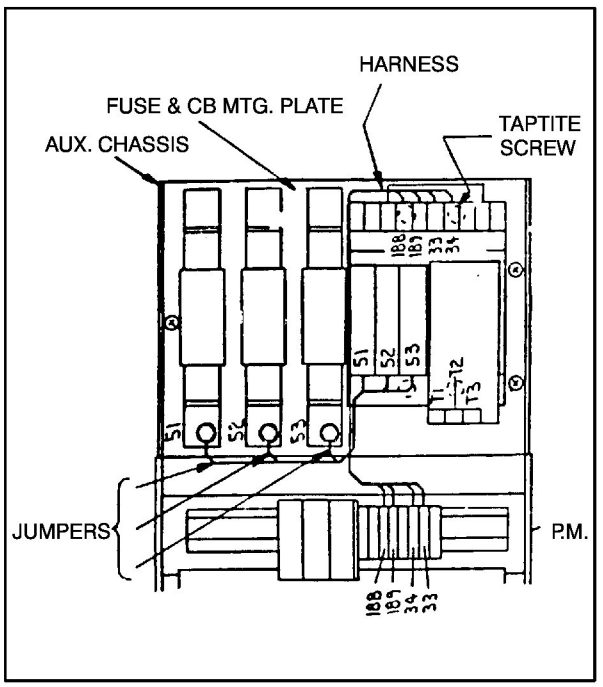

Figure 4 –FlexPak Plus with Blower Motor Starter Kit

- Front location – (Figures 3 & 4)

1. Open face plate cover and let it hang down.
2. Remove fuse/circuit breaker mounting plate from auxiliary chassis by removing three screws.
3. Mount Blower Motor Kit to fuse/circuit breaker mounting plate using four taptite screws provided. Screws enter from rear of mtg. plate. (Reference Figure 5). ***NOTE: Kit is mounted on left hand side for MinPak Plus and right-hand side for FlexPak Plus. (Reference Figures 3 & 4).***
4. Remount fuse/circuit breaker mounting plate to auxiliary panel using same screws previously removed.
5. Connect wire harness to terminal board on Blower Motor Starter Kit. (188, 189, 33 & 34) Route wire as shown in Figure 3 & 4. Connect other side of harness to terminal board on controller power module (188, 189, 33 & 34).

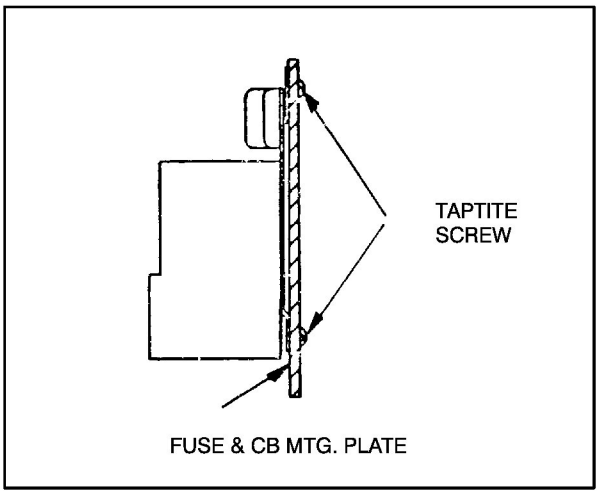

Figure 5 – Side View Of Blower Motor Starter Mounted To Fuse/Circuit Breaker Panel

6. Connect jumpers 51, 52, 53 to respective fuse block terminals on Blower Motor Starter Kit. Connect the other side of these jumpers to the respective connectors/terminals of the fuse connectors on the FlexPak Plus or terminals of the circuit breaker on the MinPak Plus.
7. Set the amperage dial on the starter to the blower motor nameplate full load current.
8. Tighten all connections that may have been loosened during kit installation.
9. Close faceplate and tighten screws.

TRIP RESET

The Blower Motor Starter Kit is shipped from the factory for a Manual Reset Operation which is accomplished by pushing in the blue button on the starter.

WARNING

SELECTING AUTOMATIC RESET OF THE OVERLOAD RELAY OR WIRING THE START CIRCUITRY IN A MANNER OTHER THAN SHOWN IN THIS AND OTHER APPLICABLE INSTRUCTION MANUALS MAY CAUSE INADVERTENT AND/OR UNEXPECTED MACHINE MOVEMENT. MAKE A CONSCIOUS DECISION BEFORE SETTING UP THE DRIVE IN SUCH A MANNER. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN BODILY INJURY.

If automatic reset is desired, move the tan dial with a small screwdriver in its slot to the counter clockwise direction so the arrow is pointing to the Auto location on the starter, (located left of blue pushbutton.) This will result in an automatic reset capability on trip.