



1334-MOD-W4

Auto Restart Card

Description

The 1334-MOD-W4 Auto Restart Card is designed for use in both Bulletin 1334 and 1335 AC Drives. It is designed to initiate a Drive fault trip reset and restart after all fault trip conditions except ground fault. A twenty second interval occurs between the time the fault trip occurs and the reset/restart sequence is initiated. To reset the Drive after a ground fault, input power to the Drive must be cycled off and on. For this reason, the Drive Auto Restart Card cannot normally be used for a ground fault condition. If the Drive run or start contact remains closed when input power to the Drive is cycled however, auto restart sequencing will occur after power to the Drive is restored.

Jumper selection on the card allows 1, 3, or 5 fault trip/restart sequences to be selected. Automatic restart sequence and status indication are accomplished by operation of relay contacts on the card. The relay contacts change state in response to the detection of a fault trip condition. An LED status indicator is also mounted on the card. During fault trip /restart conditions the LED remains illuminated. If an unsuccessful restart sequence occurs, a final fault trip is initiated and the LED changes to a blinking mode.

When the Auto Restart Card is installed in a standard Bulletin 1334 or 1335 Drive, it is necessary to modify the start/stop control of the Drive. Standard Drives use a pair of pushbuttons in a three-wire control scheme for starting and stopping the Drive. To obtain auto restart operation with the Auto Restart Card, it is necessary to change the Drive start/stop circuit from three-wire to two-wire control and use a two-position start/stop switch or maintained contact. The two-position switch or maintained contact is wired in series with the run/restart contact of the Auto Restart Card to obtain Drive start/stop control.

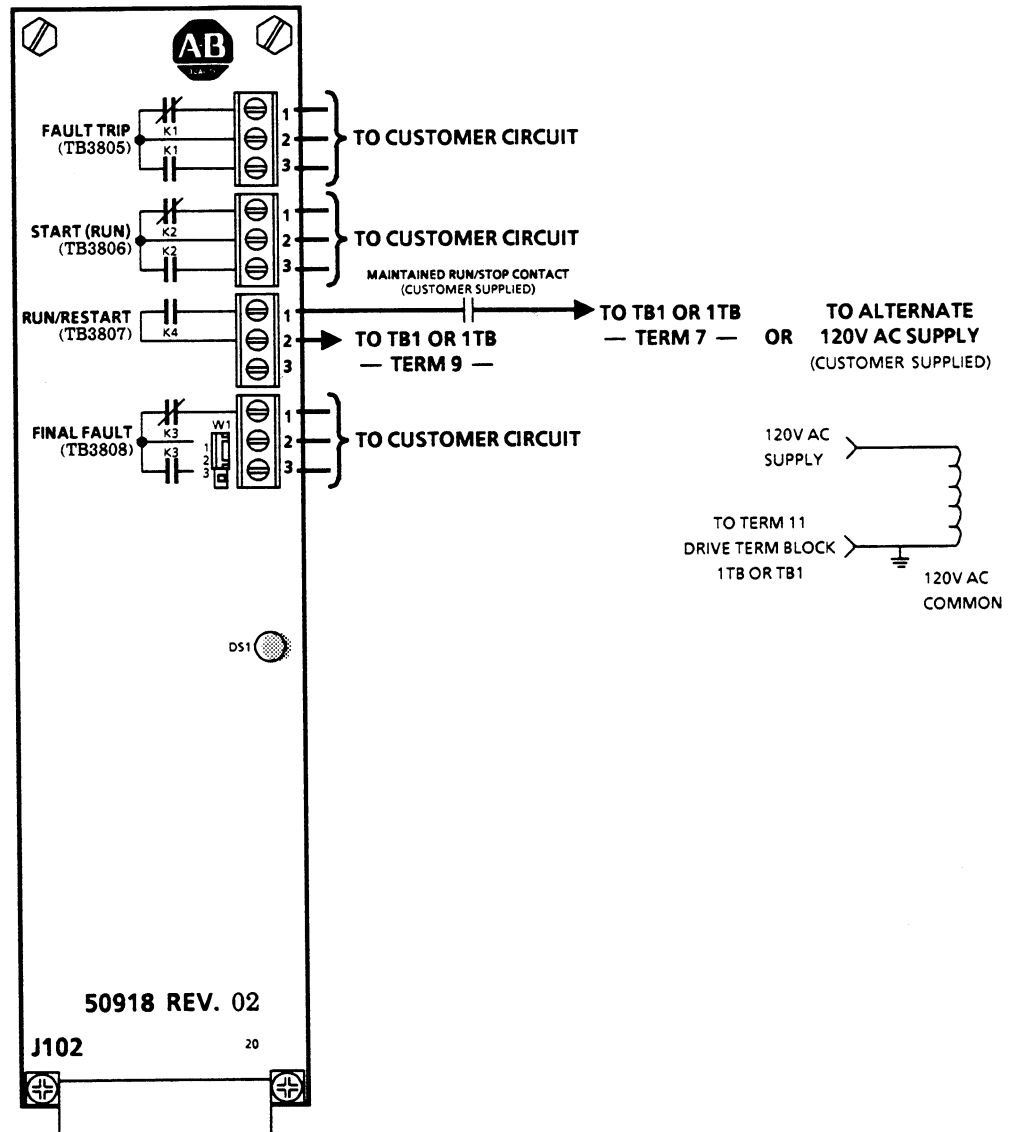


WARNING

Auto restart operation may only be used as outlined in NFPA79, paragraph 6-14 (Exceptions 1, 2 & 3) for specialized applications. Equipment damage and/or personal injury may result if the Automatic Restart is used in an inappropriate application.

For additional information about connecting two-wire start/stop control to the Drive, refer to **section 4 — Control Wiring** — and the drawings provided in the Instruction Manual for your Drive. If your Drive is a Bulletin 1335, also refer to the **Factory Installed Options** section in the instruction manual for your Drive.

Operation K1, K2, K3 & K4 relay contacts on the Auto Restart Card are shown below in their de-energized state.



Upon initial application of input power to the Drive, relays **K1** & **K3** are energized to their reset states — the opposite of the contact states shown above at terminal blocks **TB3805** & **TB3807**.

When either 90V AC or 120V AC is applied to terminal **1** of **TB3807**, the Auto Restart Card is initialized. Relay **K4** is now energized, which in turn applies the run (start) command to terminal **9** of Drive control wiring terminal block **TB1** or **1TB**. Simultaneously, the Drive is placed in the run mode, energizing relay **K2**. The **K2** form C relay contacts at terminal block **TB3806** then change state to announce that the Drive has received a run command.

When a Drive fault trip or a loss of input power to the Drive occurs, relays **K1** & **K4** are de-energized and relay **K1** announces the fault trip. LED **DS1** on the card illuminates to visually announce the fault trip locally. Relay **K4** then opens and removes the run command from the Drive.

Operation
(continued)

After relay **K4** opens, a twenty second timer begins counting down. At the end of the time period, relay **K4** is again energized to apply the run command to the Drive. When the Drive receives the run command, relay **K1** is energized to the reset state and LED **DS1** is turned off.

After the final restart attempt, if the Drive experiences another fault trip, a delay time of twenty seconds will elapse. After twenty seconds, relay **K3** will de-energized to annunciate that the final fault trip has occurred and that no more restart attempts will be made. LED **DS1** will now blink on and of to annunciate the fault locally.

Once a final fault trip has occurred, it will be necessary to cycle Drive input power off and on after the fault condition has been corrected to reset the Auto Restart Card.

If it becomes necessary to operate the Drive with the auto restart feature defeated, an 18 AWG stranded copper wire jumper should be connected across terminals 1 & 2 at **TB3807**. With this jumper installed, a Drive fault trip will still be annunciated by relay **K1** as described previously — however reset and restart of the Drive can now only be accomplished manually. Either Drive input power or a start (run) command must first be removed then reapplied to the Drive.

Wiring

Wiring to the card is not provided with the kit. Wiring should be made as outlined in the diagram on the previous page and in the following text. Use the adhesive backed clamps and cable ties provided in the kit to secure the wiring as required. All relay contacts are shown in their de-energized state. The maximum wire size the Auto Restart Card will accept is 18 AWG stranded copper wire.

CONTACT RATINGS

0.33 A continuous, 2A inrush, 120V AC

FAULT TRIP (TB3805) – START (RUN) (TB3806) – FINAL FAULT (TB3808)

For best results, interconnection wiring to these terminal blocks should be 3-conductor twisted cable — 7-10 turns per inch, 22 AWG minimum — with a maximum distance of 1,000 feet.

IMPORTANT

Fault Trip, Start (Run), and Final Fault contacts are electrically isolated from Drive high voltage potential. No reference to Drive voltages or logic common exists at the user connection points.

Wiring
(continued)

RUN/RESTART (TB3807)

Interconnection wiring to terminal block **TB3807** allows Drive auto restart. Auto restart requires a two-wire control scheme for starting and stopping the Drive. Standard Bulletin 1334 and 1335 Drives use a three-wire control scheme that includes a set of start/stop pushbuttons located on the Drive enclosure door. In most instances, it will be necessary to replace existing three-wire start/stop control with a two-wire control unless one of the following Drive control schemes exists.

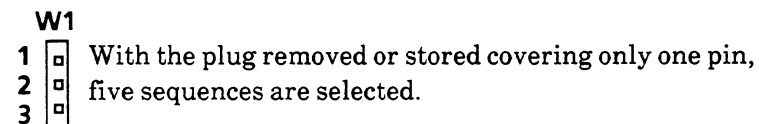
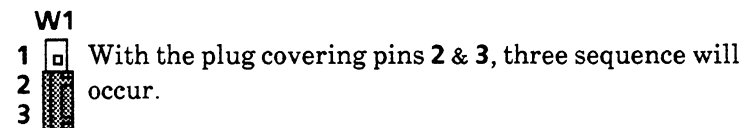
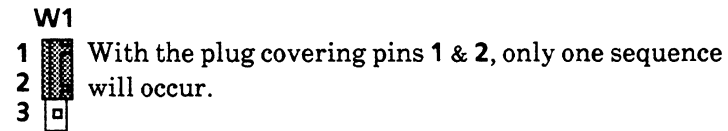
Bulletin 1334P OR Bulletin 1335	WITH RUN AUXILIARY CONTACTS, AN OUTPUT CONTACTOR, AND/OR MANUAL BYPASS
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If your Bulletin 1334P or Bulletin 1335 Drive has any of these options, a two-wire control relay interlock scheme is already used to start and stop the Drive, and a run relay contact is connected between terminals **7 & 9** on **TB1** or **1TB**, the Drive control wiring terminal block. This contact can be reconnected in place of the maintained run/stop contact shown in the illustration. **It should be noted however, that unless a maintained run/stop contact is used, auto restart will not occur after loss of Drive input power and subsequent restoration. This condition requires that a maintained contact be used as the start/stop control device for the Drive.**

When connecting two-wire start/stop control to the Drive, refer to **section 4 — Control Wiring** — and the drawings provided in the Instruction Manual for your Drive. If your Drive is a Bulletin 1335, also refer to the **Factory Installed Options** section in the instruction manual for your Drive.

Adjustments

The number of fault trip – auto restart sequences that will occur before final fault trip annunciation, is selected by jumper **W1** on the card. A twenty second delay occurs between each sequence.



Installation



WARNING

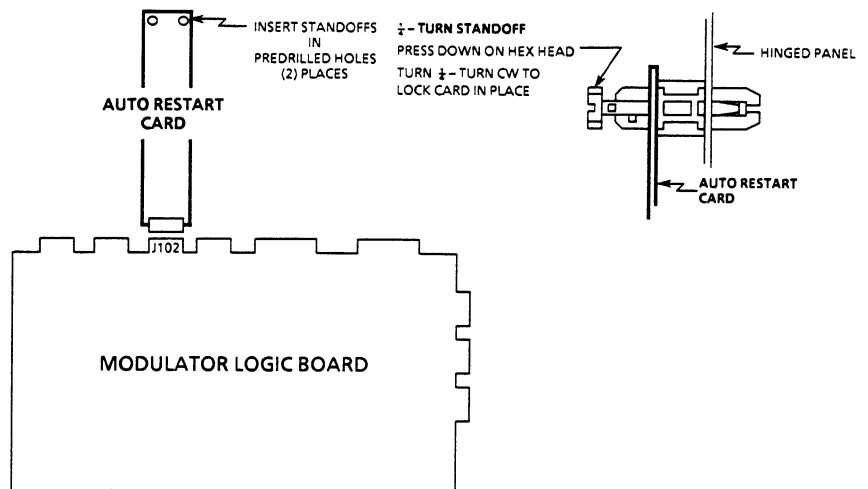
Only personnel familiar with the Drive and its associated machinery should plan or implement the installation, startup, and adjustment of MOD kits. Failure to comply may result in personal injury and/or equipment damage.

To guard against personal injury, always remove & lock-out power to the Drive at the main supply disconnect and all other power source disconnects. Ensure that DS1 is not lit when boards or wires are being installed or connected. Refer to the instruction manual for your Drive for LED location.

Each 1334-MOD-W4 Option Kit Includes:

- (1) Auto Restart Card, P/N 50918
- (2) $\frac{1}{4}$ Inch, $\frac{1}{4}$ - Turn Standoffs, P/N 201104
- (4) Adhesive Backed Cable Clamps, P/N 201315
- (4) Cable Ties, P/N 222747
- (4) Adhesive Backed Cable Tie Mounting Clamps, P/N 238848

As shown in the installation drawing below, two predrilled holes have been provided above Modulator Logic Board connector J102. Installation requires removing power to the Drive and installing (2) $\frac{1}{4}$ - turn standoffs into the predrilled holes. The card is then plugged onto the edge connector while pressing the top of the card onto the (2) installed standoffs. To secure the card in place, press down on each hex head screw and turn $\frac{1}{4}$ - turn CW.





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