

## AS3-ACI PCB Manual Scope and PCB Operation

This manual will focus on the VF-AS3 terminal board removal and the installation and operation of the replacement AS3-ACI 120-volt discrete input terminal board. All other aspects of the terminal board operation are described in the VF-AS3 Instruction Manual (E6582062).

The AS3-ACI is UL 61800-5-1 compliant up to an altitude of 4000 meters.

The AS3-ACI is designed to allow a customer-supplied discrete 120 VAC control input to be used with the VF-AS3 ASD. The AS3-ACI accepts a 120 VAC on/off discrete input. The 120 VAC on/off

control method is used by the system to control the discrete terminal input functions (i.e., F, R, I1, etc.).

The AS3-ACI is a direct replacement for the standard terminal board received with the VF-AS3 ASD.

No special programming or program changes are required to use the AS3-ACI. However, application-specific setup programming may be required.

For further system setup and configuration information see the VF-AS3 Instruction Manual.

With the exception of the 120-volt AC input terminals, all terminals function as described in the VF-AS3 Instruction Manual.

See the VF-AS3 Instruction Manual for an expanded description of these terminals.

## Specifications

Table 1: Ratings Information.

Parameter	Rating
Input Voltage	120 VAC $\pm$ 10%
Storage Temperature	-25° – 70° C
Operating Temperature	-10° – 60° C

## AS3-ACI Precautions

### DANGER

- Ensure that the ASD system is locked out/tagged out before attempting to perform maintenance on or when making adjustments to the ASD system.
- Ensure that all system/ASD power is off and that the power and charge LEDs of the ASD are off.
- The AS3-ACI uses 120 VAC and may cause serious injury if it comes into contact with personnel or if it is used improperly.
- **ONLY** use the X2 terminal of the T31A terminal strip as the return for the discrete 120 VAC inputs.
- **DO NOT** use the CC or any other terminals of the AS3-ACI as a return for the 120 VAC signals. The CC terminals are to be used as the return lines for the low-voltage I/O signals **ONLY**.
- **DO NOT** run the low-voltage control and/or monitoring and the 120 VAC control cabling within the same conduit.
- **DO NOT** run the low-voltage control and/or monitoring cabling, and/or the 120 VAC control cabling within the same conduit as the 3-phase power cables.
- Shielded cables are recommended for control line cabling.
- Ensure that the system is properly grounded.
- Electrical connections, wire types, and layouts that are external to the ASD shall adhere to all local and regional codes and standards.
- This system is to be configured and operated by properly trained and qualified personnel only.

#### Qualified personnel shall:

- Have carefully read the entire manual.
- Be familiar with the construction and function of the ASD, the equipment being driven, and the hazards involved.
- Be able to recognize and properly address hazards associated with the application of motor driven equipment.

# TOSHIBA AS3-ACI Installation and Operation Manual

AS3-ACI  
DN:98214-001

- Be trained and authorized to safely energize/deenergize the equipment, lock-out/tag-out, ground the equipment, and clear equipment faults in accordance with established safety practices.
- Wear appropriate personal protective equipment (PPE).

For additional information on workplace safety, visit [www.osha.gov](http://www.osha.gov).

## Remove/Install the AS3-ACI PCB

*Note: The requirements for access to the PCB will be typeform-specific.*

1. Remove/open the required panels to access the terminal board of the ASD.
2. Unscrew the ground screw of the terminal board.
3. Slide the PCB downward until clearing the side slots that hold the PCB.
4. Perform the aforementioned instructions in reverse order to install the AS3-ACI PCB.

To secure the newly inserted AS3-ACI PCB use the M4 x 8 mm screw that is supplied with the kit as the ground screw.

## Discrete Input Terminal Activation

The 120 VAC discrete input terminals are F, R, I1, I2, I3, and I4. Apply a 120 VAC input signal to activate the terminals. The terminal and the user-assigned function are active for the duration of the activation.

*Note: Sink/source switching is not used with this PCB.*

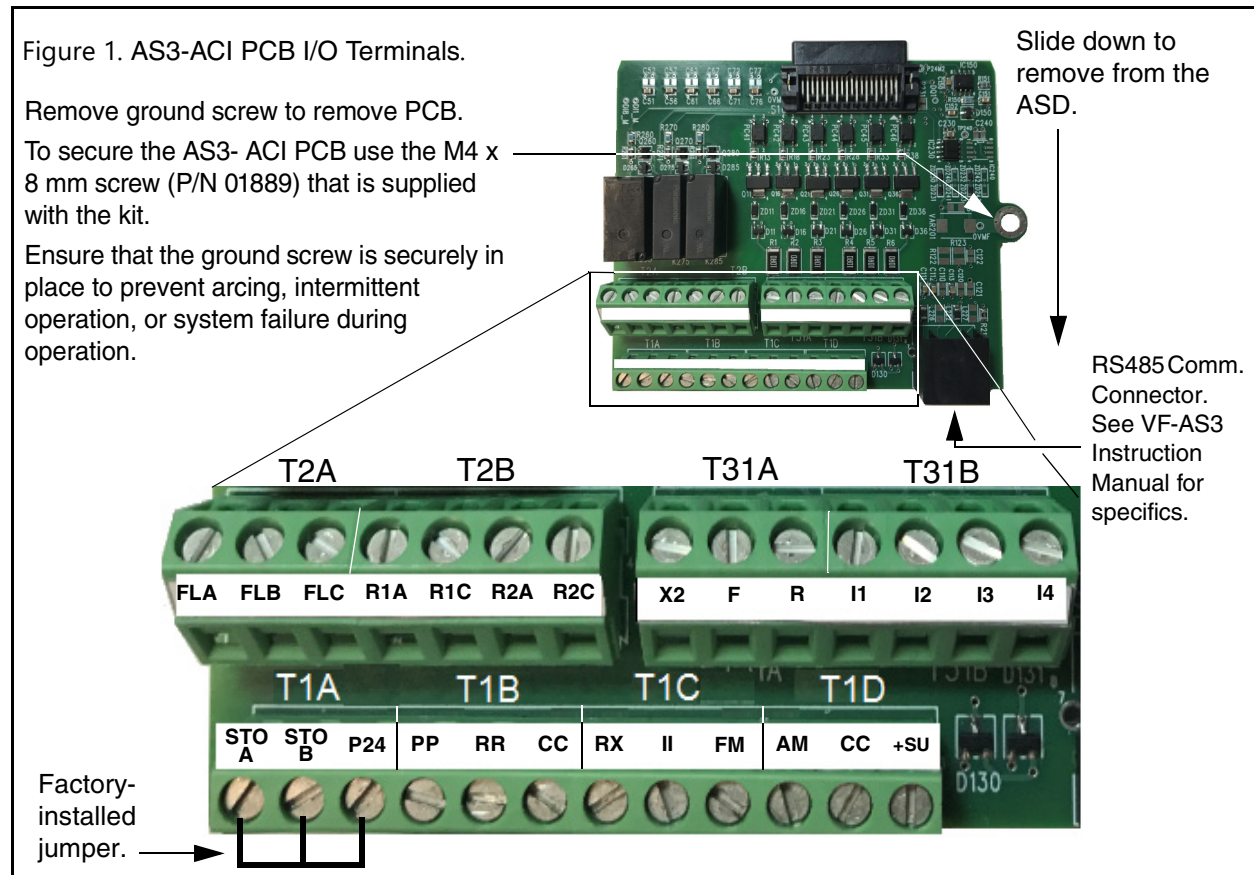
Terminals with no function assigned will not respond to an input signal.

## CAUTION

The X2 terminal of the T31A connector is the neutral return for the 120 VAC input. No other terminals of the AS3-ACI are to be used for the neutral return of the 120 VAC signal.

**DO NOT** use the CC terminals or any other terminal of the AS3-ACI, other than the X2 terminal, as a return for the 120 VAC input signals.

All other terminals, I/O ports, and connections of the AS3-ACI PCB operate as described in the VF-AS3 Instruction Manual.



## AS3-ACI PCB Terminal Programming

The programmable discrete input terminals of the AS3-ACI are accessed for programming as described in the VF-AS3 Instruction Manual (E6582062).

Table 2 lists the 120-volt discrete input terminals of the AS3-ACI PCB, the corresponding terminals of the AS3 ASD Terminal PCB, and the associated parameter numbers used for programming.

The related functions of the discrete input terminals (i.e., response times, normally open/closed, etc.) will be of the associations listed in Table 2 (e.g., I1 Response Time Setting = F143, I2 Response Time Setting = F144, etc.) and are described in the VF-AS3 Instruction Manual.

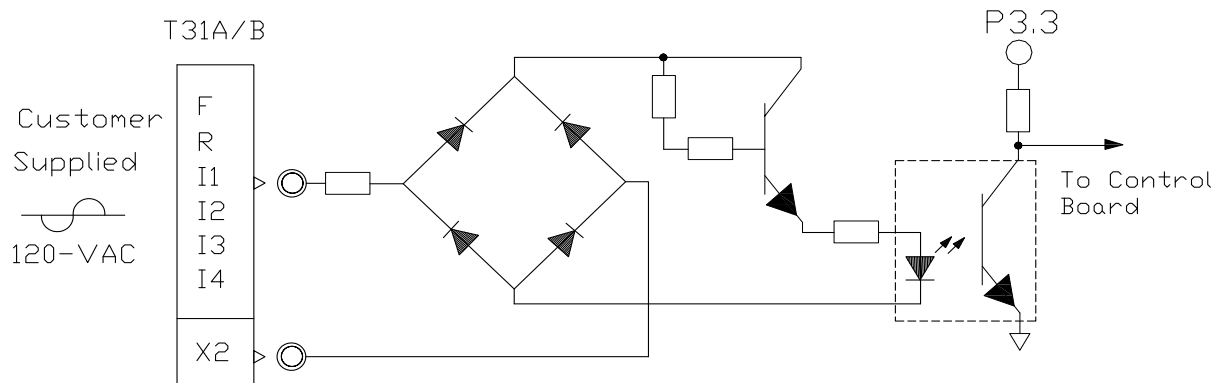
All remaining terminal configuration applicables are as outlined in the VF-AS3 Instruction Manual.

AS3 ASD PCB/AS3-ACI PCB Terminal Parameters.

Table 2: Discrete Input Terminal Correlation.

AS3-ACI PCB	AS3 ASD PCB	Param. Number
F	F	F111
R	R	F112
I1	S1	F114
I2	S2	F115
I3	S3	F116
I4	S4	F117

Figure 2. Typical 120-Volt AC Input.



Only the X2 terminal may be used as the discrete signal return.