MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Amikon cover with selected ABB reference pages; not a complete installation manual

SAMI STAR / SAFT 164 AIO

SAFT164AIO

ISOLATED ANALOG INPUT OUTPUT BOARD

OFFICIAL SOURCES

ABB SAMI STAR-US-04A: selected safety and SAFT164AIO reference pages, unchanged.

A summary of the modular units and their abbreviations is provided in Table 1-1.

Table 1-1 Unit Abbreviations

Module	Abbreviation
Contactor Unit	CTU
Line Converting Unit	LCU
Capacitor Bank Unit	CBU
Line Rectifier Unit	LRU
Line Supply Unit	LSU
Inverter Unit	INU

Safety

The SAMI STAR drive provides adequate circuit protection not only to motor circuits connected to it, but also to the drive itself. These circuit protection parameters must not be altered. Failure to comply may compromise the safety of the system and invalidate any warranties.



WARNING: Only qualified personnel familiar with the SAMISTAR, AC drive and its associated machinery should plan or implement the installation, start up and subsequent maintenance of the drive. Failure to comply may result in personal injury and/or equipment damage.

Recognized safety regulations must be observed in the installation, start-up and maintenance procedures. Refer to Electrical Safety Requirements for Employee Workplaces, for installation safety requirements and general requirements for electrical installations.

Operation - The operation of the drive should be the responsibility of personnel who are familiar with its basic functions. The operator should be informed of the significance of the Numeric Displays on the Control Panel. In case of a panel alarm indication, possibly followed by tripping, the operator must be able to decide whether the drive should be removed from operation or whether it should be restarted after resetting the alarm.

Maintenance Work - All drive maintenance must be performed by an experienced electrician, familiar with the drive as well as with solid state electronics.

To guard against possible injury that can result from accidental contact with live parts or improper procedures, the following points must be observed before any work is begun on the drive:

A. If the drive is equipped with bypass equipment, supply voltage may also be fed back to the drive cabinet through the output terminals.



WARNING: If the bypass circuitry is in the same bay as the drive, perform maintenance only when **BOTH THE DRIVE AND BYPASS ARE DE-ENERGIZED.**

If the bypass equipment is in a separate bay:

1. With all power **OFF** disconnect power cables between the drive and its output contactor. This isolation guards against voltage feedback by potentially welded contacts.

2. Take careful note of all power cables and control wiring which may be live when bypass mode is in operation.

3. Proceed with Extreme Caution.



CAUTION: To avoid damage to equipment, motor rotation should be checked while in the Bypass Mode (if supplied). If adjustment is necessary, interchange any two of the input cables to the system. **DO NOT** make correction by adjusting leads at the motor or output of the inverter.

B. Since all semiconductors exhibit leakage current, the circuits of the drive and motor should be regarded as live. DO NOT touch any components until the drive has been isolated from the supply voltage(s) by disconnects/circuit breakers/isolation switches, and it has been verified that there are no voltages present.

C. Large capacitors exist in the Intermediate DC Circuit. A properly sized discharge circuit is incorporated in all drives and should not be modified. It is designed to discharge the Bus voltage to less than 50 V DC within one minute. However, a power capacitor with even a small charge remaining is potentially lethal. If the discharge circuit has malfunctioned, discharge capacitors through a properly sized resistance.



WARNING: Discharging a voltage as low as 20 VDC by shorting the capacitors still causes a considerable discharge current and is potentially lethal.

D. To verify that no voltage is present, a measurement must be taken at the Intermediate DC bus. The measurement should be made starting with the 1000V DC range of a multimeter, then switching to lower voltage ranges as voltage level permits to prevent over-range readings.

Analog I/O Card SAFT 164 AIO

The Analog Input & Output Card SAFT 164 AIO Figure 2-24 provides two additional analog input channels (10 bit) and two additional analog output signals (12 bit). Permissible signals are -10 to + 10V DC; 0 to 10V DC; or 0 to 20mA, selectable via jumpers. All channels are galvanically isolated.

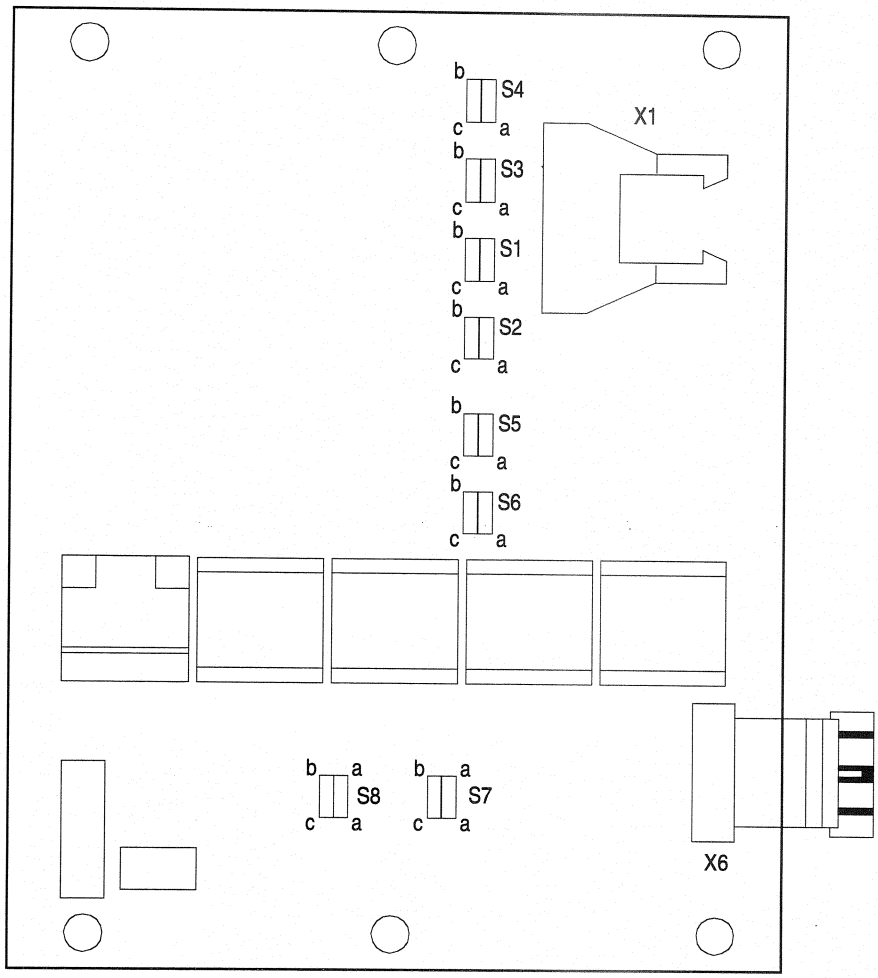

Figure 2-24 SAFT 164 Analog I/O Card

NOTE: 4 to 20mA, 20 to 4mA, and other variations are scalable in software. With this option, there will be a total of three independent analog inputs and four independent analog outputs.

Table 2-8 shows the Analog Input selection.

Table 2-8 Analog Input Current or Voltage Selection

Input 1	**S3,S4**	**S7**
0-20 mA 4-20 mA	a-c	a-c
-10- +10 V	a-b	a-b
0- +10 V	a-b	a-c
Input 2	**S5,S6**	**S8**
0-20 mA 4-20 mA	a-c	a-c
-10- +10 V	a-b	a-b
0- +10 V	a-b	a-c

Table 2-9 shows the Analog Output selection.

Table 2-9 Analog Output Current or Voltage Selection

Output 3	**S1**
0-20 mA 4-20 mA	a-c
-10- +10 V 0- +10 V	a-b
Output 4	**S2**
0-20 mA 4-20 mA	a-c
-10- +10 V 0- +10 V	a-b