
STCI Simplex Contact Input

Functional Description

The Simplex Contact Input (STCI) terminal board is a compact contact input terminal board designed for DIN-rail or flat mounting. The STCI board accepts 24 contact inputs that are supplied with a nominal 24, 48, and 125 V dc excitation from an external source. The contact inputs have noise suppression to protect against surge and high-frequency noise. The STCI works with Mark* Vle systems.

Mark Vle Systems

In the Mark Vle systems, the PDIA I/O pack works with the STCI. The I/O pack plugs into the D-type connector and communicates with the controller over Ethernet. Only simplex systems are supported.

Board Versions

Four versions of STCI are available as follows:

Terminal Board	Contact Inputs	TB Type	Excitation Voltage
STCIH1A	24	Fixed	Nominal 24 V dc, floating, ranging from 16 to 32 V dc
STCIH2A	24	Pluggable	Nominal 24 V dc, floating, ranging from 16 to 32 V dc
STCIH4A	24	Pluggable	Nominal 48 V dc, floating, ranging from 32 to 64 V dc
STCIH6A	24	Pluggable	Nominal 125 V dc, floating, ranging from 100 to 145 V dc

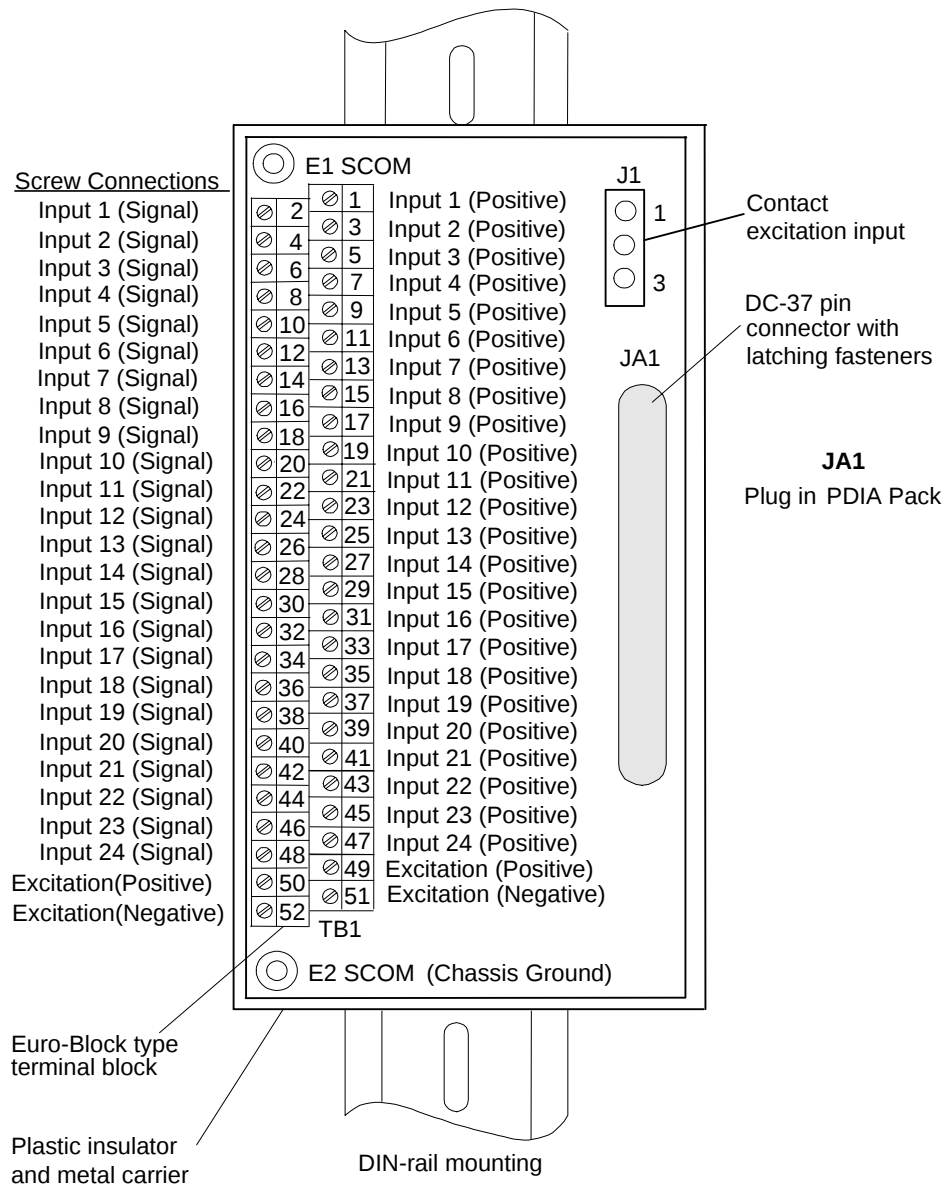
Installation

The STCI plus a plastic insulator mounts on a sheet metal carrier that then mounts on a DIN rail. Optionally the STCI plus insulator mounts on a sheet metal assembly that then bolts in a cabinet. The contact inputs are wired directly to the terminal block, typically using #18 AWG wires. Shields should be terminated on a separate bracket.

Note E1 and E2 are chassis grounding screws for SCOM.

Two types of Euro-block terminal blocks are available:

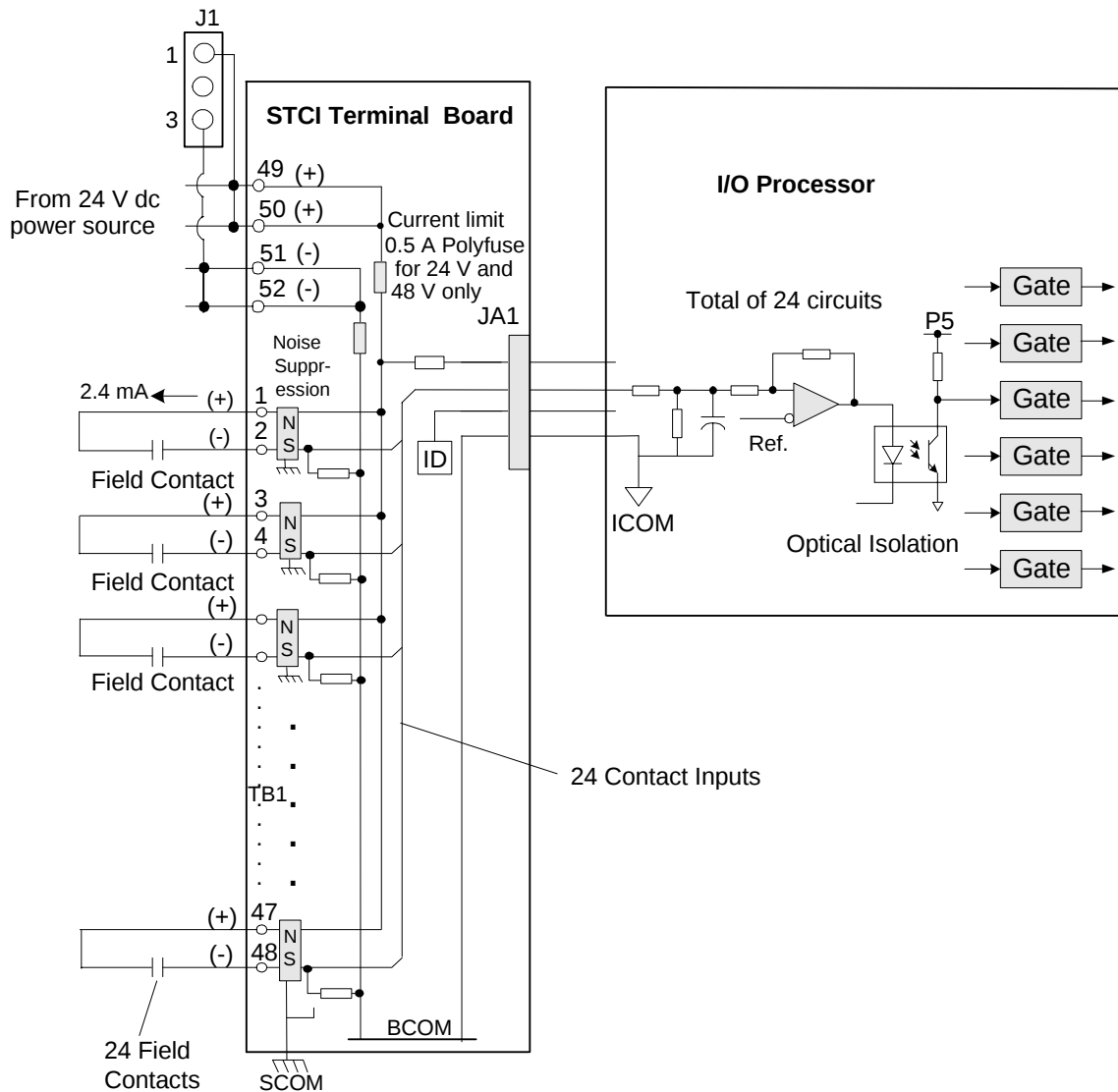
- STCIH1 has a permanently mounted terminal block with 52 terminals
- STCIH2, STCIH4, and STCIH6 has a right-angle header accepting a range of commercially available pluggable terminal blocks, with a total of 52 terminals



Operation

The function and on-board signal conditioning are the same as those on TBCI, they are scaled for 24, 48, and 125 V dc excitation. The input excitation range is 16 to 32 V dc, 32 to 64 V dc, and 100 to 145 V dc respectively. The threshold voltage is 50% of the excitation voltage. The contact sensing circuits are shown in the figure. Contact input currents are resistance limited to 2.5 mA on the first 21 circuits, and 10 mA on circuits 22 through 24. The 24 V dc supply is current limited to 0.5 A using polymer positive temperature coefficient fuses that can be reset.

Filters reduce high-frequency noise and suppress surge on each input near the point of signal entry. The discrete input voltage signals go to the I/O processor which passes them through optical isolators, converts them to digital signals, and transfers them to the controller.



STCI Contact Input Circuits

Specifications

Item	Specification
Number of channels	24 dry contact voltage input channels
Excitation voltage	H1: Nominal 24 V dc, floating, ranging from 18 to 32 V dc (Fixed TB) H2: Nominal 24 V dc, floating, ranging from 18.5 to 32 V dc (Pluggable TB) H4: Nominal 48 V dc, floating, ranging from 32 to 64 V dc (Pluggable TB) H6: Nominal 125 V dc, floating, ranging from 100 to 145 V dc (Pluggable TB)
Input current	H1: For 24 V dc applications: First 21 circuits each draw 2.5 mA (50 k Ω) Last three circuits each draw 10 mA (12.5 k Ω) H2: For 24 V dc applications: First 21 circuits draw 2.5 mA Last three circuits draw 10 mA H4: For 48 V dc applications: First 21 circuits draw 2.5 mA Last three circuits draw 10.4 mA H6: For 125 V dc applications: First 21 circuits draw 2.55 mA Last three circuits draw 10 mA
Input filter	Hardware filter, 4 ms
Fault detection in I/O board	Loss of contact input excitation voltage Non-responding contact input in test mode
AC voltage rejection	12 V rms at 24 V dc excitation. (H1 & H2) 24 V rms at 48 V dc excitation. (H4) 60 V rms at 125 V dc excitation. (H6)
Physical	
Size	15.9 cm high x 10.2 cm wide (6.25 in. x 4.0 in)
Temperature	-30 to + 65°C (-22 to 149 °F)
Technology	Surface-mount

Diagnostics

The I/O processor monitors the following functions on STCI:

- The contact excitation voltage is monitored. If the excitation drops to below 40% of the nominal voltage, a diagnostic alarm (fault) is set and latched.
- As a test, all inputs associated with this terminal board are forced to the open contact state. Any input that fails the diagnostic test is forced to the failsafe state (open) and a fault is created.
- The terminal board connector has an ID device that is interrogated by the I/O processor. The connector ID is coded into a read-only chip containing the board serial number, board type, and revision number. If a mismatch is encountered, a hardware incompatibility fault is created.

Configuration

There are no jumpers or hardware settings on the board.