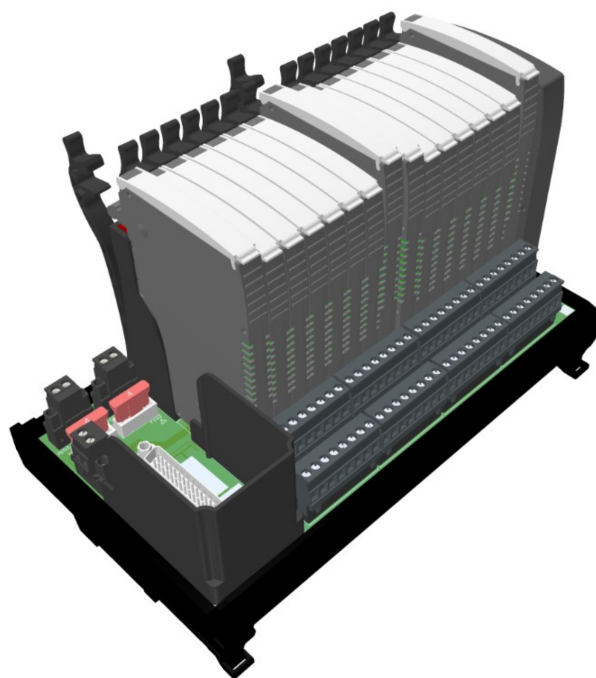


X1-TB-16-HON-01



INSTRUCTION MANUAL

SIL3 16-pos X1-Series Term Board for Safety Manager SC PUIO01 and PDIO01 Card

Models: X1-TB-16-HON-01

INTENDED USE

This Termination Board (X1-TB) provides direct connection between the I/O Card of the system and X1-Series modules. Galvanic isolation or conditioning is provided by Repeaters/Converters (X1-NIS). The 24 Vdc Power Supply of the X1-TB is connected to two plug-in terminal blocks, for redundant power supply. A monitoring circuit activates a cumulative fault in case of supply or module failure. The board can host a gateway belonging to the X1-GW series for module identification, configuration and monitoring.

TECHNICAL DATA

General

Number of positions/channels: 16

Power dissipation: 0.43 W @ 24 Vdc without modules, typical.

Supply

24 Vdc nom (20 to 28.8 Vdc), reverse polarity protected, double terminal blocks for redundant power supply, with OR diodes to mix voltages.

Current consumption: 18 mA @ 24 Vdc without modules, typical.

Max current consumption: 1.5 A (as total supply), 4 A time-lag fuse protected.

Connection: by polarized plug-in disconnect screw terminal blocks.

Wire cross-section: up to 2.5 mm² (13 AWG).

Torque: 0.5-0.6 Nm.

Fault

The on-board diagnostic monitors both power supplies integrity and the module failures. Any malfunction is reported by deactivating a solid-state relay and activating the corresponding LEDs.

Cumulative alarm is issued if:

- 1) Power supply 1 or 2 < 17 Vdc or > 33 Vdc or
- 2) Any module failure active.

Cumulative alarm is removed if:

- 1) 20 Vdc < Power supply 1 and 2 < 30 Vdc and
- 2) No module failure.

Connection: by polarized plug-in disconnect screw terminal blocks.

Ratings: 100 mA 35 V (≤ 1 V voltage drop).

Wire cross-section: up to 2.5 mm² (13 AWG).

Torque: 0.5-0.6 Nm.

Field Interface

Connection: by polarized plug-in disconnect 8-position screw or push-in spring terminal blocks.

Wire cross-section: up to 2.5 mm² (13 AWG).

Torque: 0.5-0.6 Nm.

Max Voltage: 250 Vdc/Vac.

System interface

The system interface sinks current, hence it requires source I/O cards.

Connection: one SUB-D 37 poles male connector (requiring female mating connector).

Cable: FS-SICC5xxx.

Max current: 500 mA per channel.

Isolation

Field/System 2.5 kV; Field/Supply 2.5 kV; System/Supply 500 V; Field Ch/Ch 1.5 kV.

Environmental conditions

Operating temperature: temperature limits -40 to +70 °C.

Max altitude: 2000 m a.s.l.

Storage temperature: temperature limits -45 to +80 °C.

Mounting

On single DIN-rail 35 mm.

Weight: about 730 g, excluding modules.

Location: Safe Area.

Dimensions: Width 244 mm, Depth 143 mm, Height 155 mm.

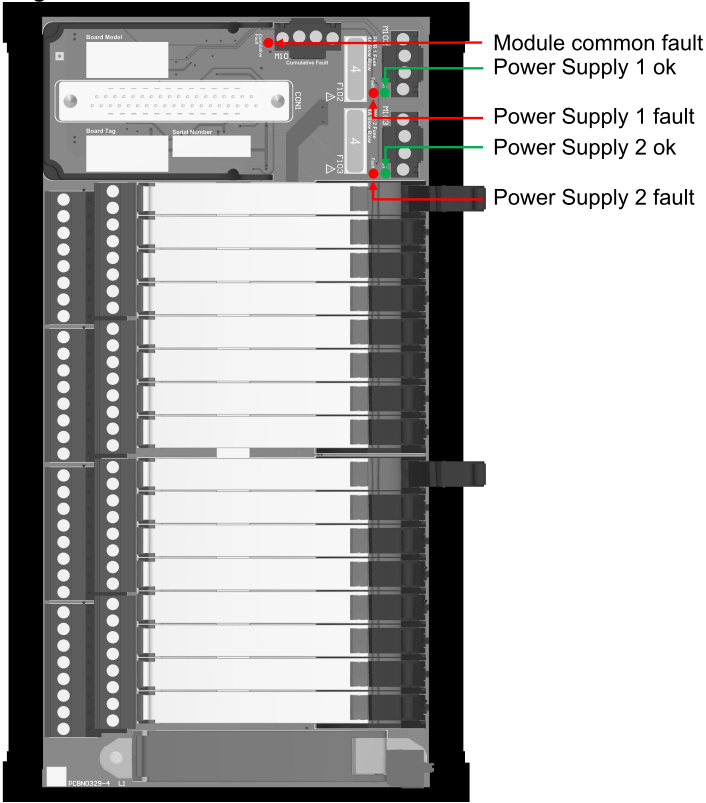


SUPPORTED CARDS & MODULES

SYSTEM	I/O CARD	MODULES
Safety Manager SC	PUIO01	X1-NIS-UNI-01-S, X1-NIS-AI-01-S, X1-NIS-AI-02-S, X1-NIS-AO-01-S, X1-NIS-AO-02-S, X1-NIS-TMP-01-S
Safety Manager SC	PUIO01 PDIO01	X1-NIS-RLO/SS-01-S, X1-NIS-RLO/SS-02-S, X1-NIS-RLO/SS-03-S, X1-NIS-RLO/SS-04-S, X1-NIS-RLO/SS-05-S, X1-NIS-RLO/EM-01-S, X1-NIS-RLO/EM-02-S, X1-NIS-RLO/EM-03-S, X1-NIS-RLO/EM-04-S, X1-NIS-RLO/EM-05-S, X1-NIS-PAS-01-S, X1-NIS-PAS-03-S, X1-NIS-DI-03-S, X1-NIS-DI-04-S, X1-NIS-DO-01-S, X1-NIS-DO-02-S

USER INTERFACE

LEDs: two green/red LEDs indicate that Power Supply 1 and 2 are ok or faulty. An additional red LED indicates the presence of a common fault among the modules hosted on the board.



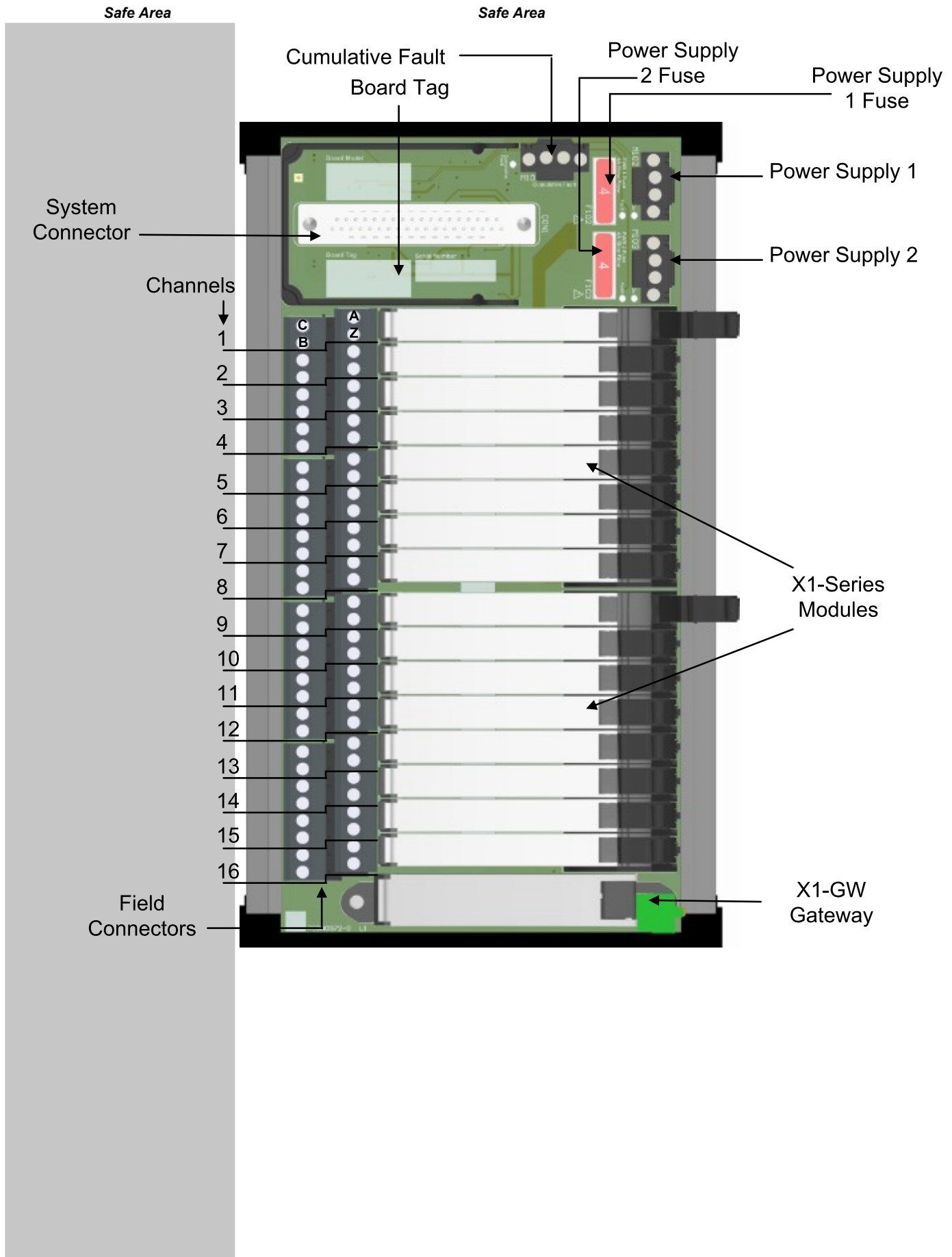
SERIAL INTERFACE

Identification Parameters

The following parameters allow the identification of the module:

Product Code: X1-TB-16-HON-01 = 10 (decimal).

FUNCTION DIAGRAM



Temp. TMP0048 Rev.0

www.gminternational.com



Functional Safety Management Certification:

GM International is certified to conform to IEC61508:2010 part 1 clauses 5-6 for safety related systems up to and included SIL3. In addition, GM International products have been granted I.S. certificates from the most credited Notified Bodies in the world.

Data specified in this document are merely descriptive of the products and should be integrated with relevant technical specifications. Our products are in constant development and the information presented herein refers to the time of document issue. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. Terms & Conditions can be found at our website. For more information refer to instruction manual.