

15.28 TSGAS-1624

15.28.1 Safe gas / flame detector input FTA (0-20 mA, 16 channels)

The field termination assembly module TSGAS-1624 is the interface between gas/flame detectors in the field and the safe high-density analog input module SAI-1620m in Safety Manager. The TSGAS-1624 module has sixteen analog input channels which may be used for both safety-related and non-safety-related applications. The TSGAS-1624 module uses a SICC-0001/Lx system interconnection cable to transfer the 16 input signals to a (redundant pair of) SAI-1620m module(s).

The FTA module has a universal snap-in provision for standard DIN EN rails, and screw terminals for connection of power supply, ground and field wiring.

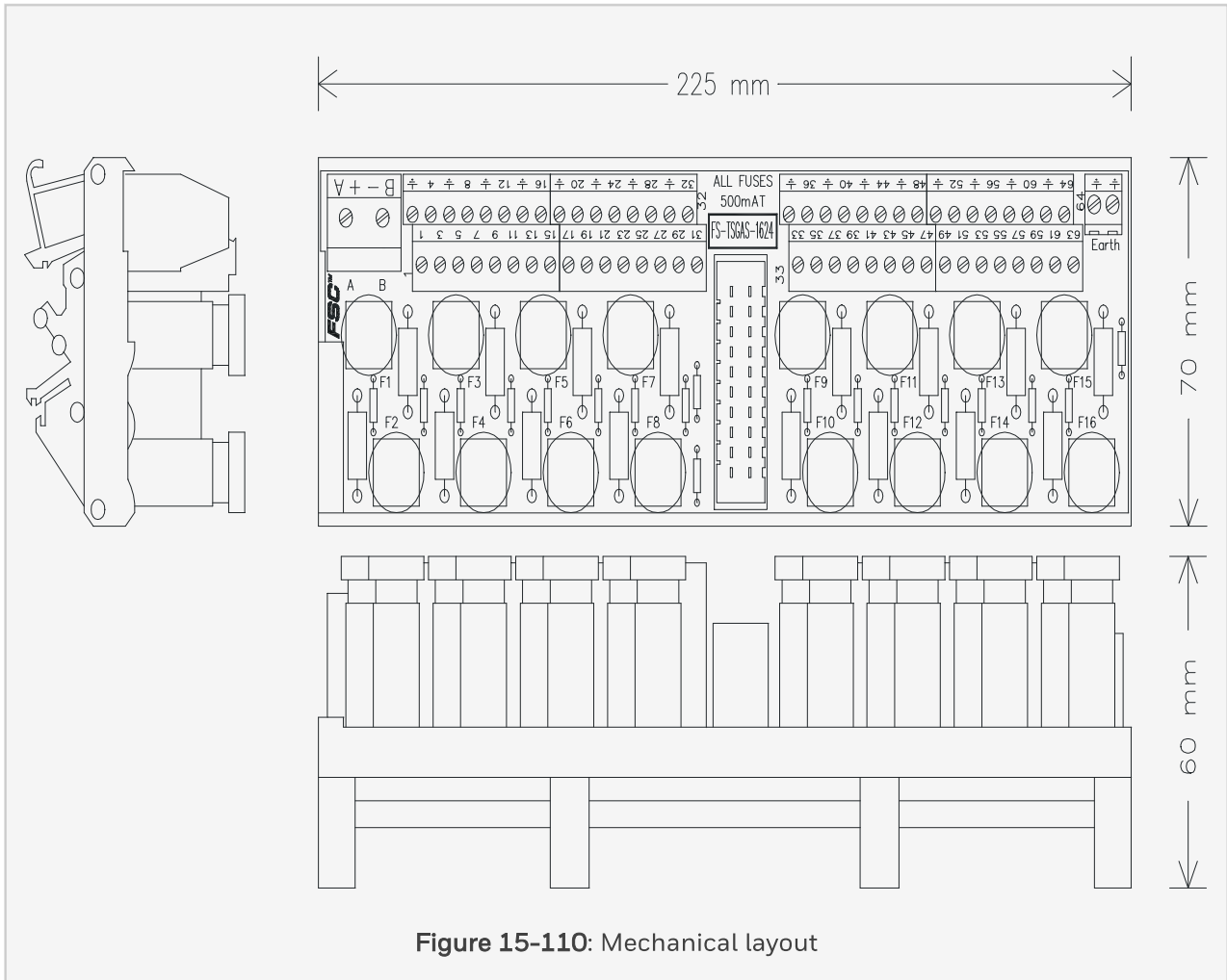


Figure 15-110: Mechanical layout

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15.28.2 Main functions

The TSGAS-1624 module has three main functions:

- Linear direct conversion of 0(4)-20 mA DC field signals to the signal levels of the safe high-density analog input module SAI-1620m
- Power supply distribution to each transmitter (500 mA fused)
- Enable monitoring of the external power connected to the TSGAS-1624 module

15.28.2.1 Linear direct conversion

The input circuit of each channel consists of a high-precision resistor which converts the input current (0-20 mA) to the input voltage for the high-density analog input module SAI-1620m . The power to the analog transmitter is fused (500 mA) per channel. Each analog input has its own terminal for the field cable shield.

The below figure shows the schematic diagram for connecting a transmitter (active and passive).

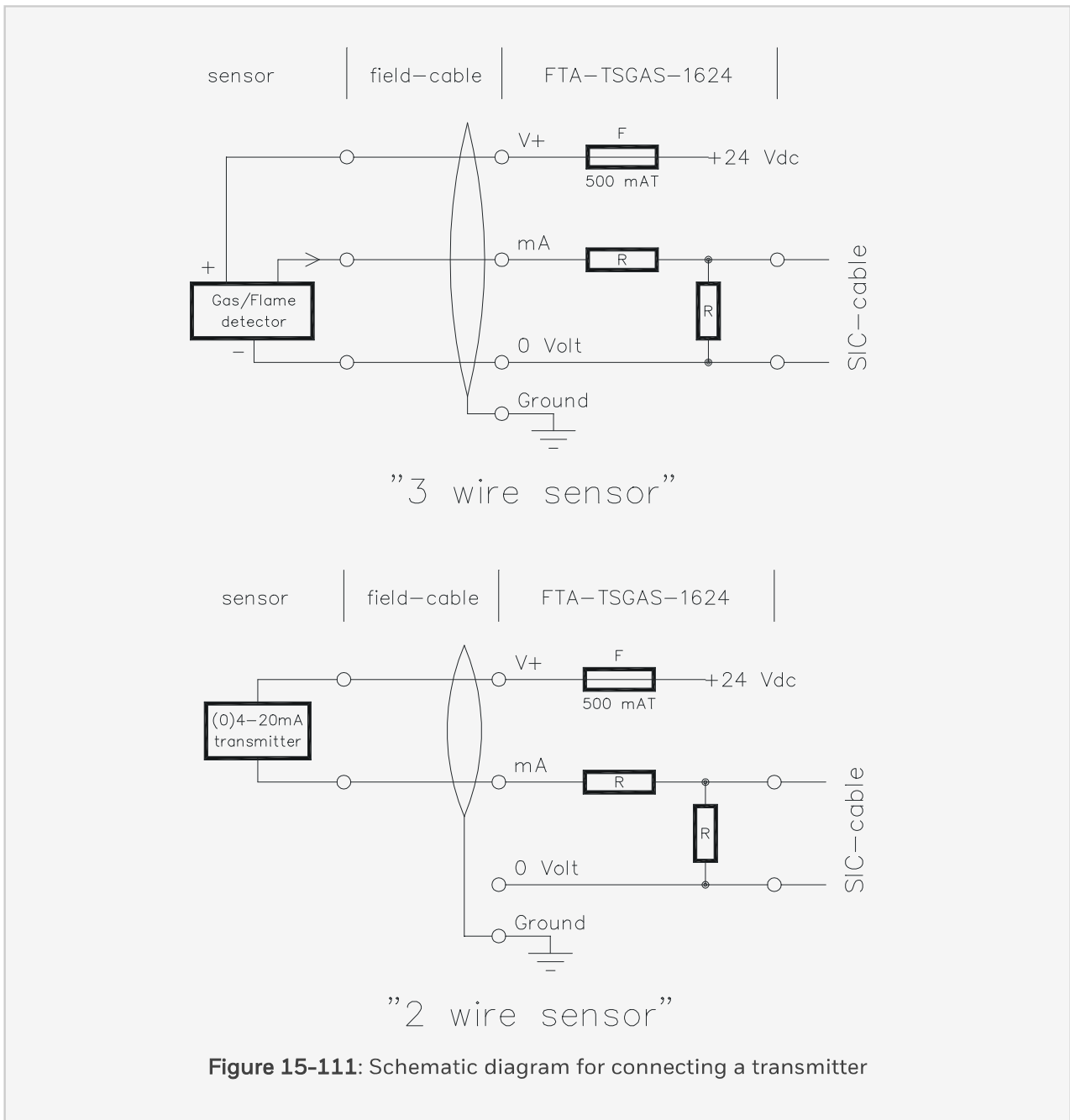


Figure 15-111: Schematic diagram for connecting a transmitter

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15.28.2.2 External power

External power can be connected to the TSGAS-1624 module via the power screw terminal pair marked ‘A’ and ‘B’.

Note:

The 0 V connection of the external power is directly connected to the common 0 V of all sixteen analog inputs.


The Safety Manager software can monitor the external power voltage via the safe high-density analog input module SAI-1620m.



15.28.3 Applications

For details on applications and connection options for the TSGAS-1624 module, see section [SICC 0001/Lx](#).

15.28.4 Connections

15.28.4.1 External power and ground

The external supply voltage (Vext) and ground are connected to the following screw terminals (marked ‘A’ and ‘B’ and ‘

Screw terminal	Function
A	24 V DC Vext
B	0 V DC Vext
	Ground connection
	Ground connection (1 ground wire is enough)

15.28.4.2 Connections diagram

The TSGAS-1624 module has sixteen groups (= sixteen channels) of four screw terminals to provide optimum connection of field wiring, with a ground terminal per channel for screening of analog input cables. The screw terminals are numbered 1 to 64. The connections diagram of the TSGAS-1624 module is as follows:

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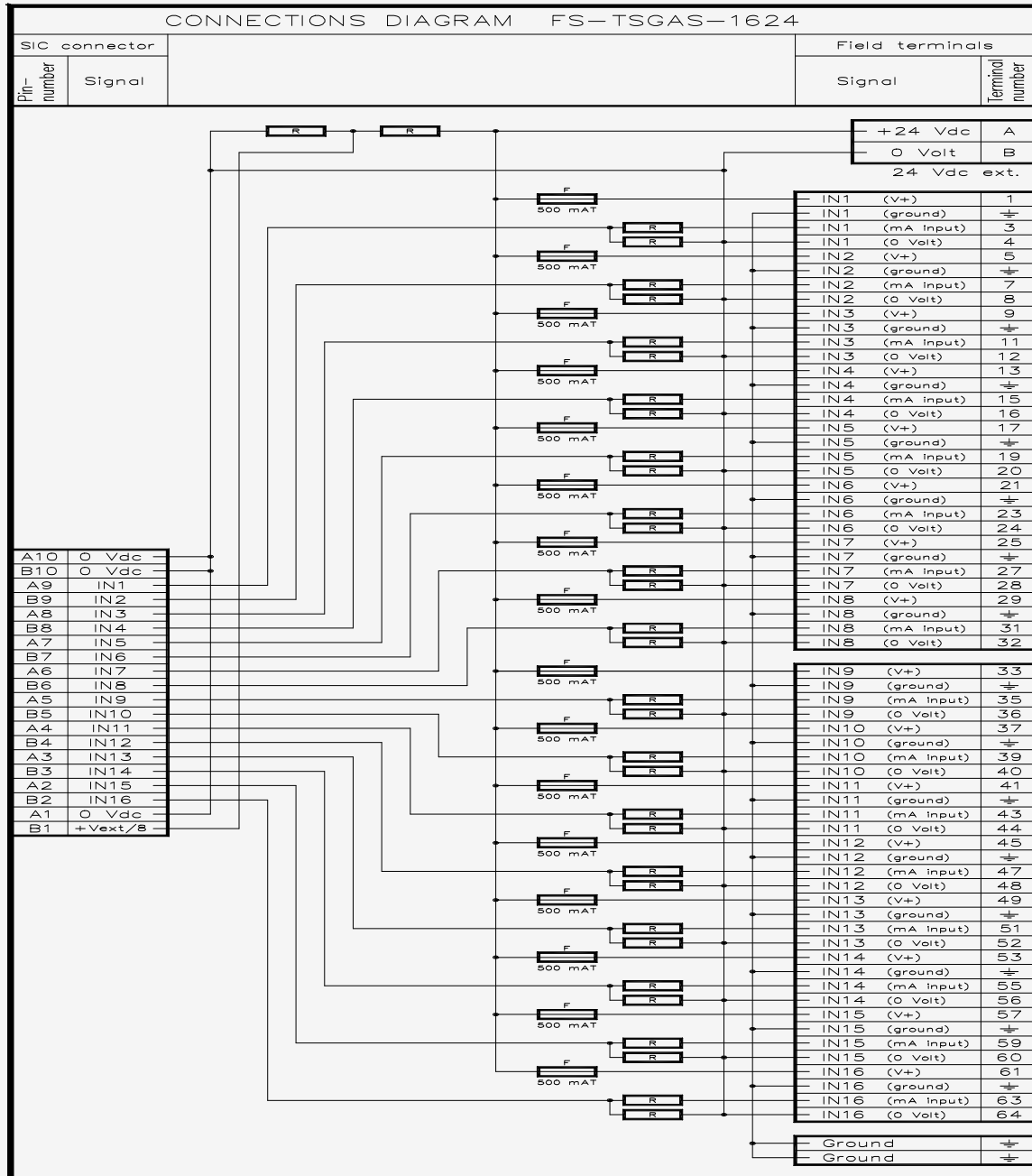


Figure 15-112: Connections diagram

15.28.5 Technical data

The TSGAS-1624 module has the following specifications:

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General	Type numbers:	FS-TSGAS-1624
		FC-TSGAS-1624
	Approvals:	CE, TUV, UL, CSA, FM
Input	Number of input channels:	16 (with common 0 V)
	Power requirements:	24 V DC external, 3 mA (without field loads)
	Input current:	0-25 mA
	Input resistance:	500 Ω (± 5%)
Output	To SAI-1620m module:	
	• Output voltage	0-4 V DC
	• Accuracy	0.1%
Fuse	Fuse rating:	500 mA
	Fuse dimensions:	5x20 mm
	Voltage rating AC:	250 V
	Voltage rating DC:	300 V
	Manufacturer:	Schurter
	Manufacturer PN:	0001.2501
	Derating curve:	Linear from 0.5 A at 25 dC to 0.35 A at 70 dC module ambient
Physical	Module dimensions:	225 × 70 × 60 mm (L × W × H)
		8.86 × 2.76 × 2.36 in (L × W × H)
	DIN EN rails:	TS32 / TS35 × 7.5
	Used rail length:	226 mm (8.90 in)

Termination	Screw terminals:	
	• Max. wire size	2.5 mm ² ; (AWG 14)
	• Strip length	7 mm (0.28 in)
	• Tightening torque	0.5 Nm (0.37 ft-lb)
	Power screw terminals (A, B):	
	• Max. wire size	16 mm ² ; (AWG 8)
	• Strip length	7 mm (0.28 in)
	• Tightening torque	1.2 Nm (0.88 ft-lb)