TSGASH-1624

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

Description

The field termination assembly module TSGASH-1624 is the interface between gas/flame detectors with HART interface in the field and the safe high-density analog input module SAI-1620m in Safety Manager.

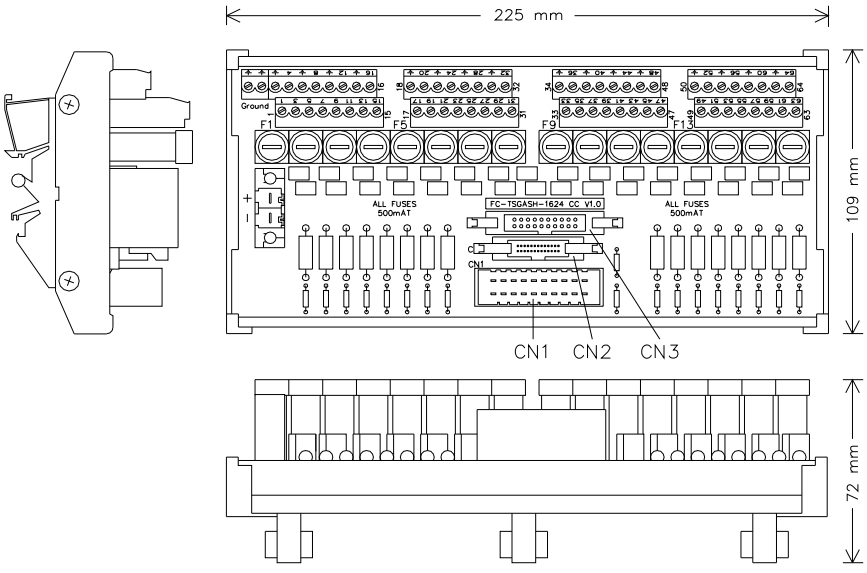
The TSGASH-1624 module has sixteen analog input channels which may be used for both safety-related and non-safety-related applications.

The TSGASH-1624 module provides HART interface on all 16 channels. The 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 ground and field wiring.

The FTA module has a 2-pole power connector to connect the module with a 24Vdc power source.

Figure 334 Mechanical layout



Main functions

The TSGASH-1624 module has the following functions:

- Linear direct conversion of 0(4)-20mA DC field signals to signal levels of the safe high-density analog input module SAI-1620m
- Power supply distribution to each transmitter (500mAT fused)
- Enable connection to HART multiplex units of MTL or Pepperl+Fuchs (P+F)
- Enable monitoring of the external power connected to the TSGASH-1624 module.

Linear direct conversion

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

Each analog input has its own terminal for the field cable shield.

Figure 335 on page 559 shows the schematic diagram for connecting a transmitter (active or passive).

HART interface

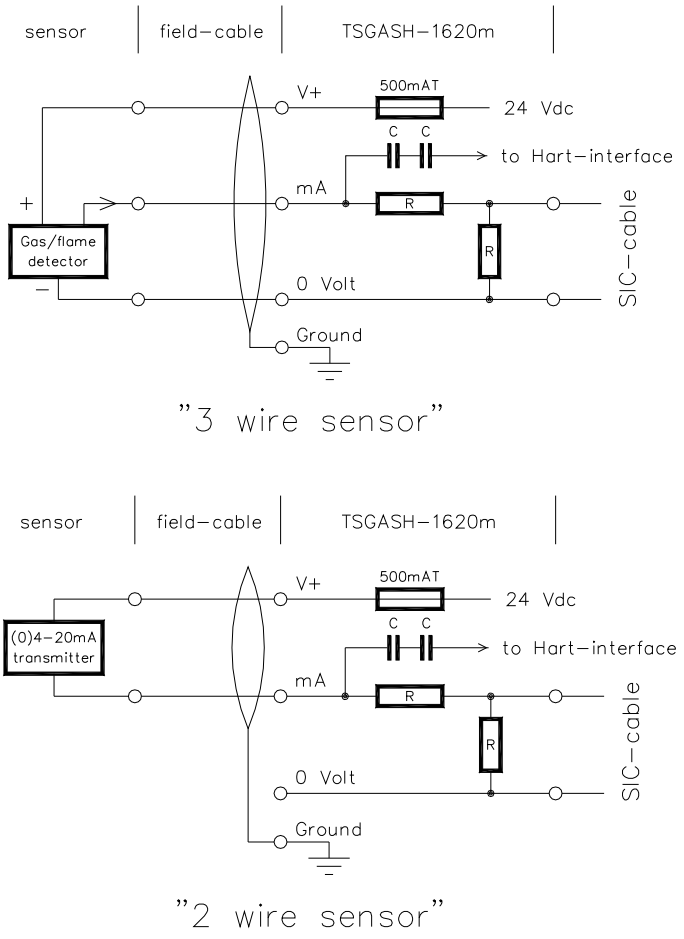
The TSGASH-1624 module provides interfaces to HART multiplex units from MTL and Pepperl+Fuchs (P+F). Dedicated connectors are installed on the FTA to enable the use of the standard cables from these suppliers.

The following equipment can be connected:

	MTL Solution	P+F solution
Multiplexer unit	MTL4842	KFD0-HMS-16 or KFD2-HMM-16
Cable	MTL FLAT20-2.2	K-MH26
Connector on FTA[1]	CN3	CN2

1 See Figure 334 on page 557

Figure 335 Schematic diagram for connecting a transmitter



External power

A 24 Vdc power distribution cable (see data sheet “PDC-MB24-x” on page 812 for details) can be used to connect the main bus bar with the power connector on the TSGASH-1624 module.

- When using other connection cables, make sure the wire size is adequate and the supplied Weidmuller BL 5.08/SN OR connector is used.

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.

Applications

For applications and connection options for the TSGASH-1624 module, see section “SICC-0001/Lx” on page 715.

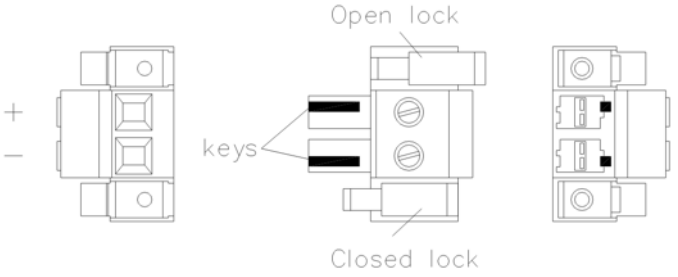
Connections

External power and ground

Figure 336 on page 560 shows the top, side & bottom view and the pin assignment of the power input connector.

- The pin marked '+' is pin 1: connected to +24Vdc bus bar.
- The pin marked '-' is pin 2: connected to the 0Vdc bus bar.

Figure 336 Power input connector (Weidmuller BVZ 7.62/02F SW) top, side and bottom view



The two (orange) locking slides of the cable-connector in Figure 336 on page 560 keep the cable-connector locked when inserted into the power connector.

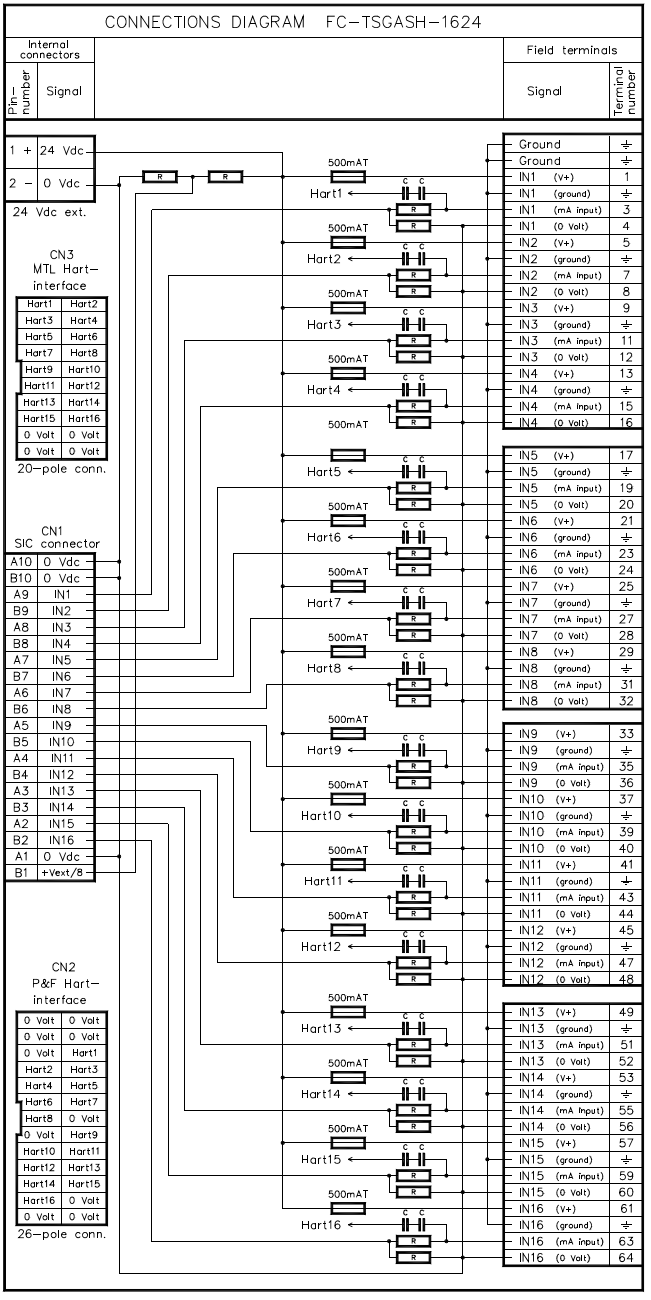
The (two) Ground screw connections on the top left side in Figure 334 on page 557 are used to connect Ground with the "ground" pins of the channels. One ground wire is enough.

Connections diagram

The TSGASH-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 TSGASH-1624 module is as follows:

Figure 337 Connections diagram



Technical data

The TSGASH-1624 module has the following specifications:

General	Type numbers[1] :	FC-TSGASH-1624 CC V1.0
	Approvals:	CE; TUV, UL, CSA pending
Input	Number of input channels:	16 (with common 0 V)
	Power requirements:	24 Vdc external, 2.5mA (without field loads)
	Input current:	0—25 mA
	Input resistance:	500 Ω (± 5%)
Output	To SAI-1620m module:	
	• Output voltage	0—4 Vdc
	• Accuracy	0.1%
	To HART multiplexer unit:	
	• Output voltage	Max. 11 V peak-peak
	• Series impedance	> 2µF
Fuses	Rating:	500 mAT (slow-acting)
	Dimensions:	5 × 20 mm (0.20 × 0.79 in)
Physical	Module dimensions:	225 × 109× 60 mm (L × W × H) 8.86 × 4.29 × 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 diameter	2.5 mm² (AWG 14)
	• Strip length	7 mm (0.28 in)
	• Tightening torque	0.5 Nm (0.37 ft-lb)
	Power connector:	
	• model	2 pole header with keying
	• Make and type	Weidmuller: BVZ 7.62/02F SW (con.) Weidmuller: KO BV/SV7.62 (keys)
	• Strip length	8 mm (0.28 in)
	• connectable conductors	0.5—6 mm^2 (AWG20—AWG10)

1 FC-type modules are conformal coated modules. Conformal coated modules have the letters "CC" preceding the version number.