



10105/2/1

Fail-safe high-density analog input module (24 Vdc, 16 channels)

Description

The analog input module 10105/2/1 has sixteen analog inputs (0-4 V) and an external voltage readback input (0-4 V). The sixteen channels are fail-safe (safety class AK5) and have an isolated analog 0 V common to all sixteen channels.

The analog inputs of the 10105/2/1 module require the field signals to be converted from 0-20 mA to a level that can be used by the 10105/2/1 module. This conversion can be established in two ways:

- on the field termination assembly module FTA-T-14, or
- using the analog input conversion module 10105/A/1, which is placed on a programming connector (P_x) on the back of the I/O backplane in the 19-inch rack.

Analog input signals such as thermocouple, PT-100, etc. can only be used after conversion to 0(4)-20 mA using a dedicated converter (and an FTA-T-14 or 10105/A/1 module).

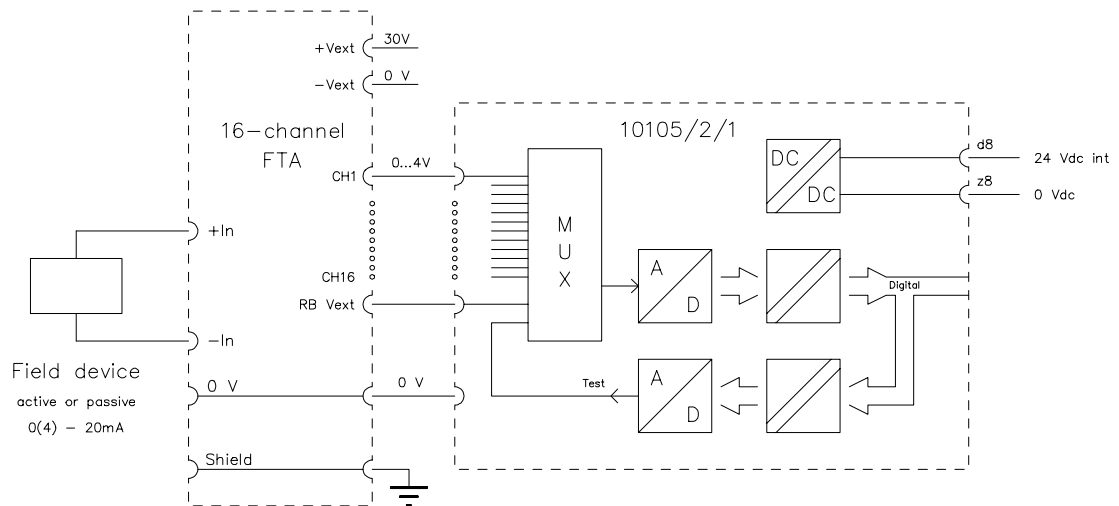


Figure 1 Schematic diagram for connection of inputs to 10105/2/1 module

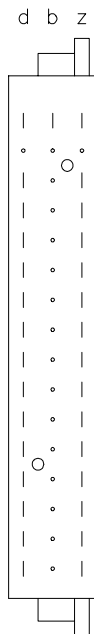


The self-test of the module, which is controlled by the FSC system's central processor unit (CPU), includes:

- absolute accuracy,
- correct conversion over the full range,
- crosstalk between inputs,
- channel input filters, and
- internal supply voltages.

Pin allocation

The back view and pin allocation of the 10105/2/1 module connector are as follows:



d2		b2	GND	z2	5 Vdc
d4	–			z4	–
d6				z6	
d8	Int. 24 Vdc supply			z8	Int. 0 Vdc supply
d10	Analog ground			z10	Analog ground
d12	IN 1			z12	IN 2
d14	IN 3			z14	IN 4
d16	IN 5			z16	IN 6
d18	IN 7			z18	IN 8
d20	IN 9			z20	IN 10
d22	IN 11			z22	IN 12
d24	IN 13			z24	IN 14
d26	IN 15			z26	IN 16
d28	Analog ground			z28	Readback external power
d30				z30	
d32				z32	



Connection examples

Figure 2 and Figure 3 below show typical connection examples for the 10105/2/1 module.

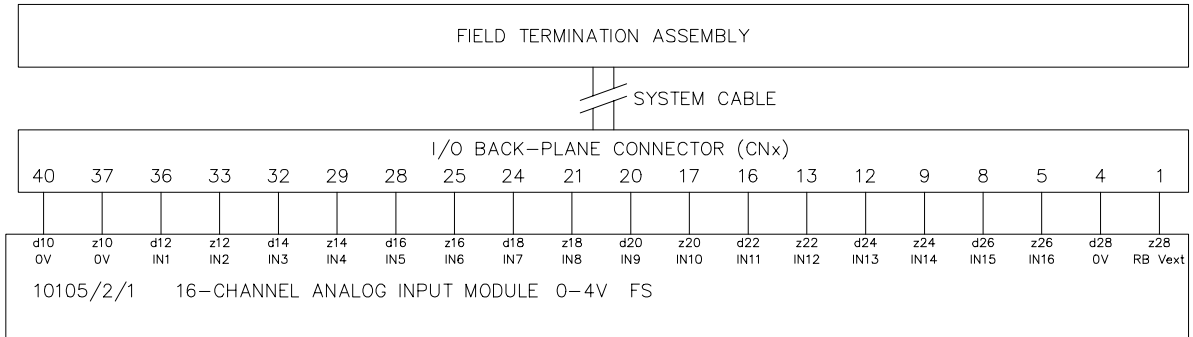


Figure 2 Connection example of 10105/2/1 module to FTA

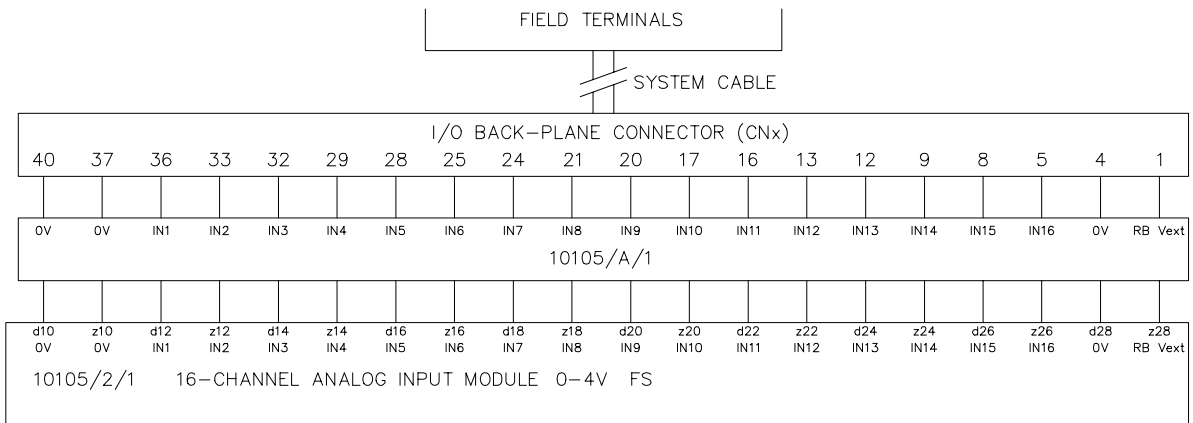


Figure 3 Connection example of 10105/2/1 module with signal converter 10105/A/1



Technical data

The 10105/2/1 module has the following specifications:

General	Type number:	10105/2/1 16900
	Approvals:	CE; TÜV, UL approvals pending
	Safety class:	AK1-6 (AK6 in redundant mode)
	Software versions:	≥ 500
	Space requirements:	4 TE, 3 HE (= 4 HP, 3U)
Power	Power requirements:	5 Vdc 35 mA 24 Vdc 35 mA
Input	Number of input channels:	16
	Input range:	0 to 4.1 V
	Input resistance:	> 1 MOhm
	A/D converter:	12-bit
	A/D converter inaccuracy:	± 1 LSB
	Module inaccuracy:	< 0.25%
	Absolute max. input signal:	± 36 Vdc
	Crosstalk between channels:	> 60 dB*
	External voltage readback:	
– range	0 to 4.1 V	
– input resistance	typically 1 MOhm	
Key coding	(See 'Key coding' data sheet)	
	Module connector code:	
	– holes	A5, C25
	Rack connector code:	
– large pins	A5, C25	

* Note:

Crosstalk is defined as follows:

A step response on one channel from 0 to 100% v.v. shall not influence any other analog input channel beyond its two least significant bits (LSBs), i.e. $20 * \log(4 / 4096)$.

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