10101/2/1 Fail-safe digital input module (24 Vdc, 16 channels)

Description

The fail-safe digital input module 10101/2/1 has sixteen 24 Vdc digital input channels. The input stage of the module is of a 'fail-to-safe' nature. This means that a component failure results in a de-energized input signal to the processor, which is the safe condition in a normally energized system.

The remaining logic circuitry on the module is completely covered by the self-test functions of the system. Within the configured process safety time, the modules are tested for:

- ability to receive logic level '0' signals,
- ability to receive logic level '1' signals, and
- crosstalk between inputs.

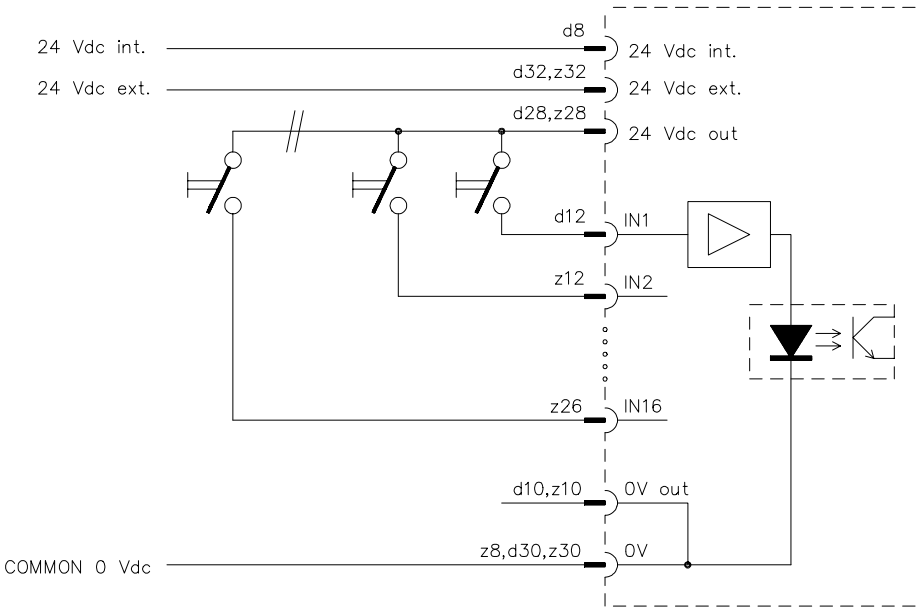
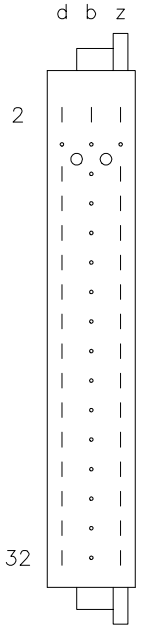


Figure 1 Schematic diagram for connection of inputs to the 10101/2/1 module

Pin allocation

The back view and pin allocation of the 10101/2/1 module connector are as follows:



d2		b2	GND	z2	5 Vdc
d4	–			z4	–
d6				z6	
d8	Supply 24 Vdc int.			z8	Supply 0 Vdc
d10	0 Vdc out			z10	0 Vdc out
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	24 Vdc ext. out			z28	24 Vdc ext. out
d30	Supply 0 Vdc			z30	Supply 0 Vdc
d32	Supply 24 Vdc ext.			z32	Supply 24 Vdc ext.

Connection examples

The figures below show a number of connection examples for the fail-safe digital input module 10101/2/1.

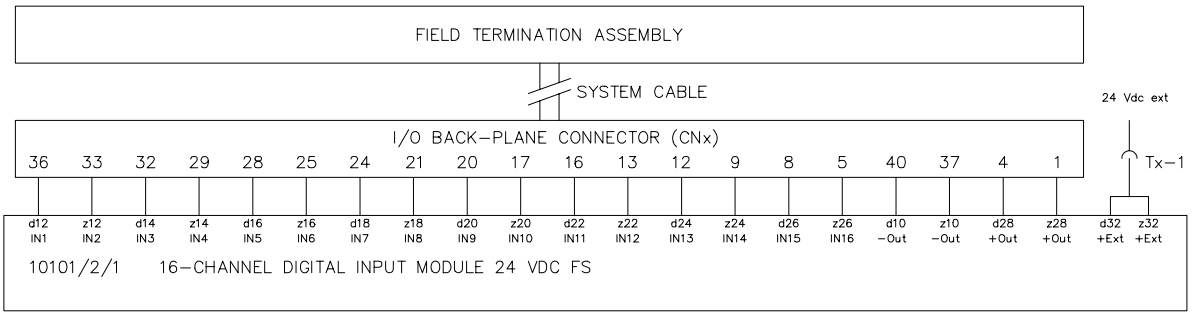


Figure 2 Connection example of 10101/2/1 module to FTA for both non-redundant and redundant I/O configurations

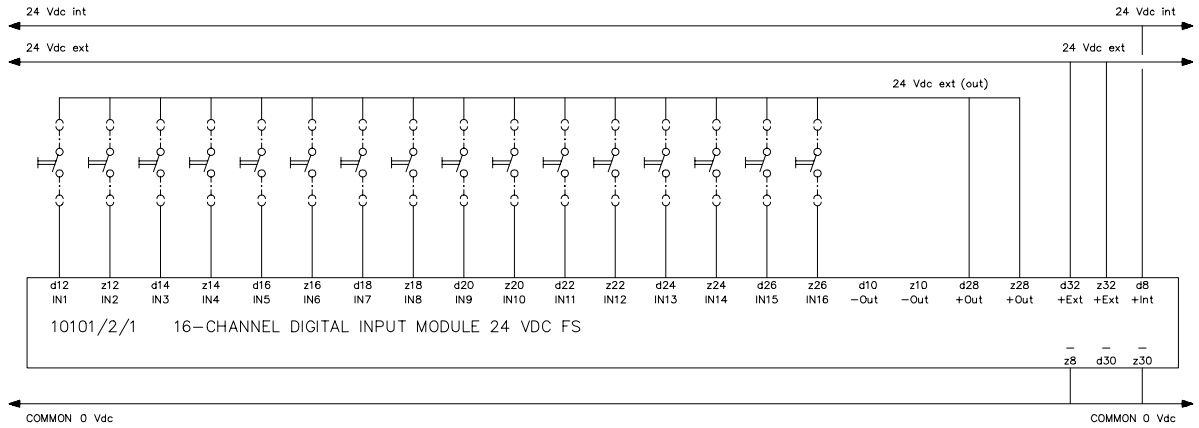


Figure 3 I/O connection example of 10101/2/1 module for non-redundant I/O configurations

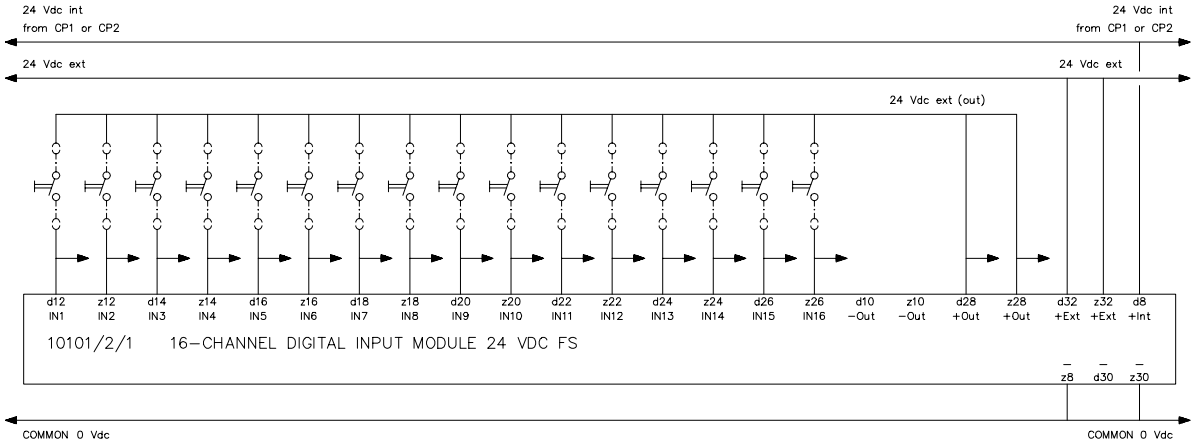


Figure 4 I/O connection example of 10101/2/1 module for redundant I/O configurations

Note:
The 24 Vdc (internal) supply must be connected to prevent fault detection during the self-test.

Technical data

The 10101/2/1 module has the following specifications:

General	Type number:	10101/2/1 11000
	Approvals:	CE, TÜV, UL
	Software versions:	≥ 3.00
	Space requirements:	4 TE, 3 HE (= 4 HP, 3U)
Power	Power requirements:	5 Vdc 8 mA 24 Vdc int. 110 mA 24 Vdc ext. 110 mA (input currents)
	Ripple content (on 5 Vdc):	< 0.5 Vp-p (0-360 Hz)
Input	Number of input channels:	16
	Maximum input voltage:	36 Vdc
	Input current:	7 mA at 24 Vdc
	Input HIGH:	> 15 Vdc
	Input LOW:	< 9 Vdc (I < 2 mA)
	Input delay:	typically 10 ms
Key coding	(See 'Key coding' data sheet)	
	Module connector code:	
	– holes	A5, C5
	Rack connector code:	
	– large pins	A5, C5