



10201/2/1

Fail-safe digital output module (24 Vdc, 0.55 A, 8 channels)

Description

The fail-safe digital output module 10201/2/1 has eight 24 Vdc, 550 mA output channels to drive loads up to 13 W.

These loads may be resistive (e.g. lamps) or inductive (e.g. solenoids). For inductive loads, a suppression diode is included on each output. The outputs, including the suppression diodes, are fully tested and may therefore be used for fail-safe applications.

Within the configured process safety time, the outputs are tested for:

- ability to de-energize,
- ability to de-energize the group (via secondary means),
- crosstalk between outputs, and
- functioning of the suppression diodes.

The outputs are split into two groups of four outputs each. Each group has its own secondary means of de-energization. This increases the shutdown selectivity in case of a channel failure.

The secondary means of de-energization enables the watchdog and/or the processor to de-energize the outputs, irrespective of the result of the application function.

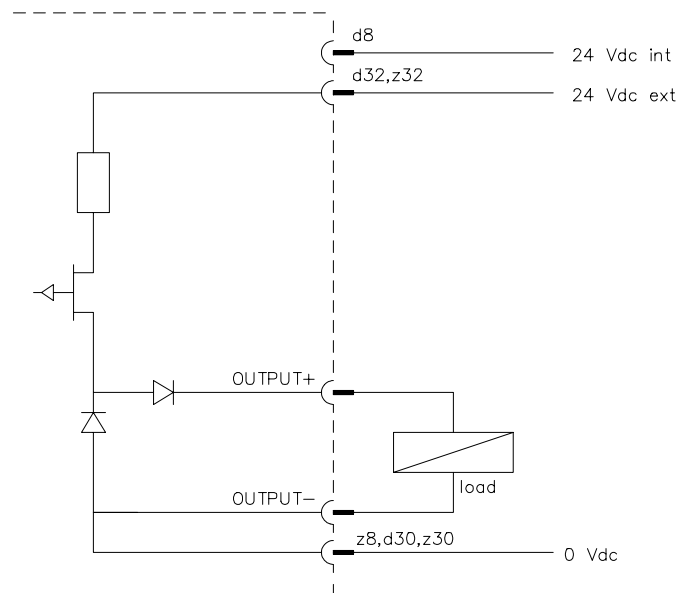
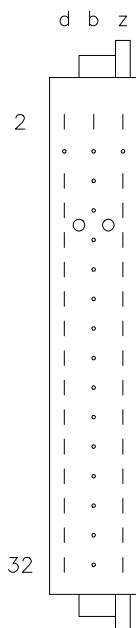


Figure 1 Schematic diagram for connection of one output to the 10201/2/1 module

Pin allocation

The back view and pin allocation of the 10201/2/1 module connector are as follows:



d2	WDG	b2	GND	z2	VCC
d4	—			z4	—
d6				z6	
d8	Supply 24 Vdc int.			z8	Supply 0 Vdc
d10	(0 Vdc)			z10	(0 Vdc)
d12	OUT 1+			z12	OUT 1—
d14	OUT 2+			z14	OUT 2—
d16	OUT 3+			z16	OUT 3—
d18	OUT 4+			z18	OUT 4—
d20	OUT 5+			z20	OUT 5—
d22	OUT 6+			z22	OUT 6—
d24	OUT 7+			z24	OUT 7—
d26	OUT 8+			z26	OUT 8—
d28	(0 Vdc)			z28	(0 Vdc)
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 output module 10201/2/1.

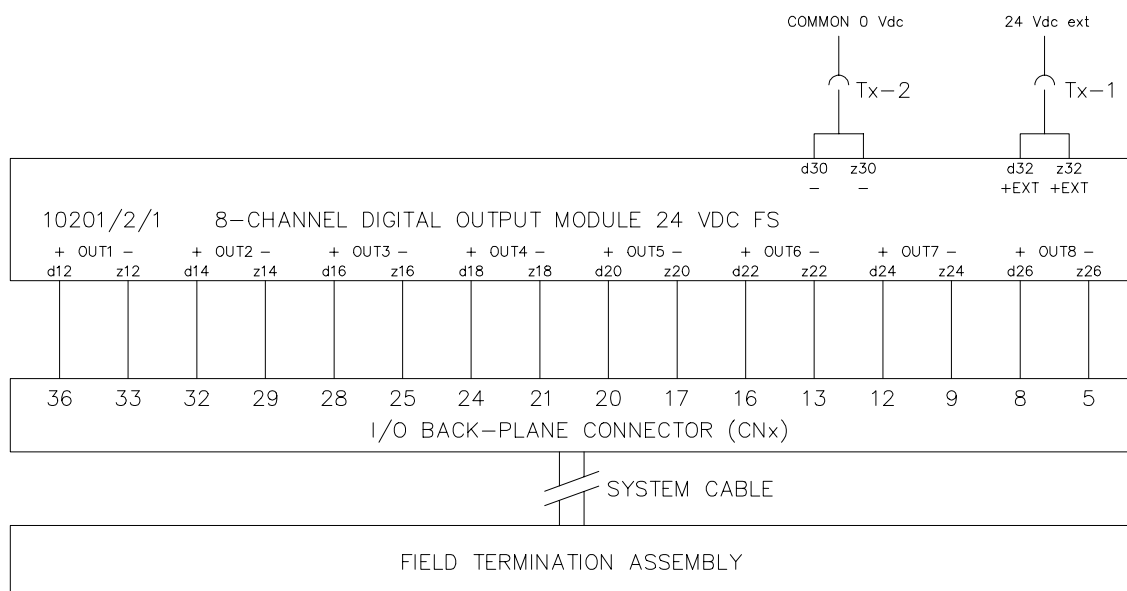


Figure 2 Connection example of 10201/2/1 module to FTA for both non-redundant and redundant I/O configurations

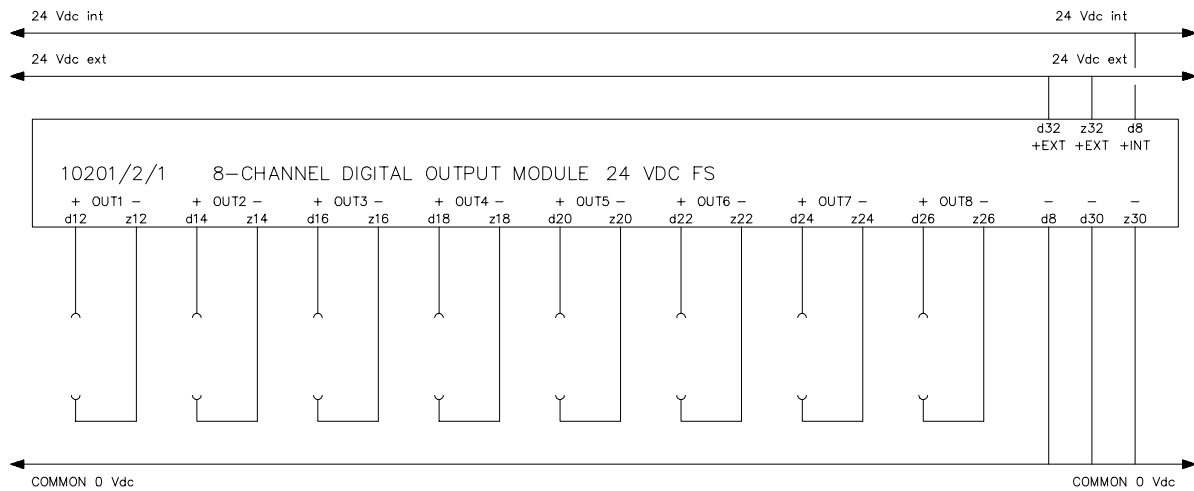


Figure 3 I/O connection example of 10201/2/1 module for non-redundant I/O configurations

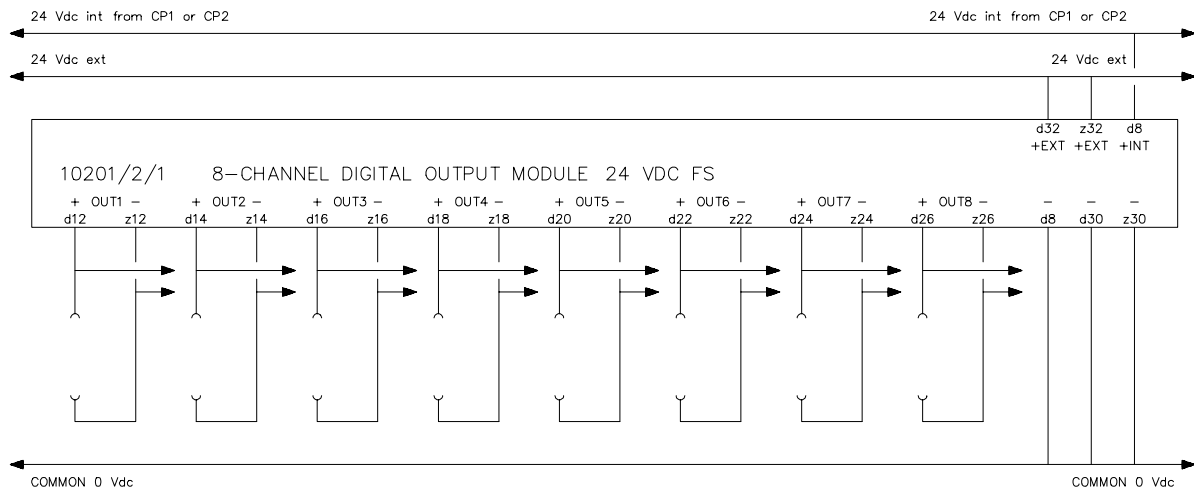


Figure 4 I/O connection example of 10201/2/1 module for redundant I/O configurations

Note:

The 24 Vdc internal and external power supplies must be connected to prevent fault detection during the self-test of the output module (pins d8, z8, d30/z30 and d32/z32).

Technical data

The 10201/2/1 module has the following specifications:

General	Type number:	10201/2/1 11501*
	Approvals:	CE, TÜV, UL
	Software versions:	≥ 3.00
	Space requirements:	4 TE, 3 HE (= 4 HP, 3U)
Power	Power requirements:	5 Vdc 25 mA
		24 Vdc internal 25 mA
		24 Vdc external 70 mA (without output load)
Output	Number of output channels:	8
	Output specification:	24 Vdc solid-state source, short-circuit proof
	Maximum current:	550 mA* (see 'FSC output modules' data sheet)
	Maximum lamp load:	120 mA (2.9 W)*
	Maximum load capacitance:	1 µF
	Voltage drop:	< 2.0 Vdc at 500 mA*
	Off current:	< 0.1 mA
	WDG input current:	8 mA
Key coding	(See 'Key coding' data sheet)	
	Module code:	
	– holes	A9, C9
	Rack code:	
	– large pins	A9, C9

* Note:

10201/2/1 modules with suffix code 11500 have a maximum current of at least 450 mA, a maximum lamp load of 100 mA (2.4 W) and a voltage drop of < 2.0 Vdc at 400 mA..

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