MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

HONEYWELL

FC-SDO-0424 V1.4

FOUR-CHANNEL SAFETY DIGITAL OUTPUT MODULE

Used with the applicable Safety Manager SDO-0424 configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Honeywell Safety Manager EP-SM.MAN.6284, Release151, pp.388-393; R162 section10.9, pp.513-522.

10.9 SDO-0424

10.9.1 Safe digital output module (24 V DC, 2 A, 4 channels)

The safe digital output module SDO-0424 has four 24 V DC, 2 A output channels to drive loads up to 50 W. The maximum module load is 6 A.

These loads may be resistive (such as lamps) or inductive (such as 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 safe applications.

Within the configured Diagnostic Test Interval, the outputs are tested for:

- Ability to de-energize the output,
- Ability to de-energize the group (via secondary means),
- Crosstalk between outputs, and
- Functioning of the suppression diodes.

The external 24 V DC supply is split into two groups of two outputs each. Each group has its own secondary means of de-energizing.

A secondary means of de-energizing (SMOD) enables the watchdog and the processor to de-energize the outputs, irrespective of the result of the application function.

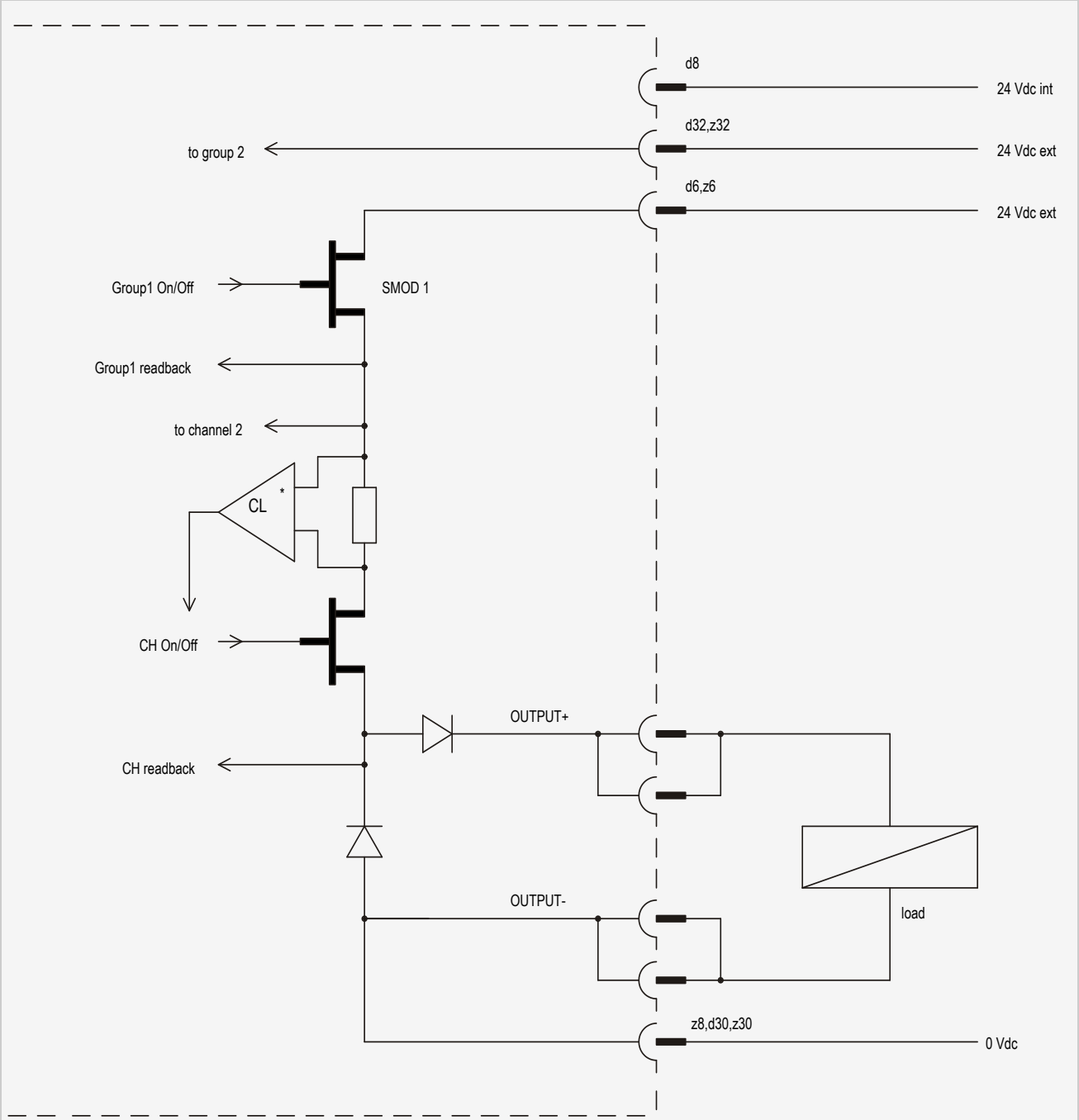


Figure 10-42: Schematic diagram for connection of one output to the SDO-0424 module

*Current Limiting circuit

10.9.2 Pin allocation

The back view and pin allocation of the SDO-0424 module connector are as follows:

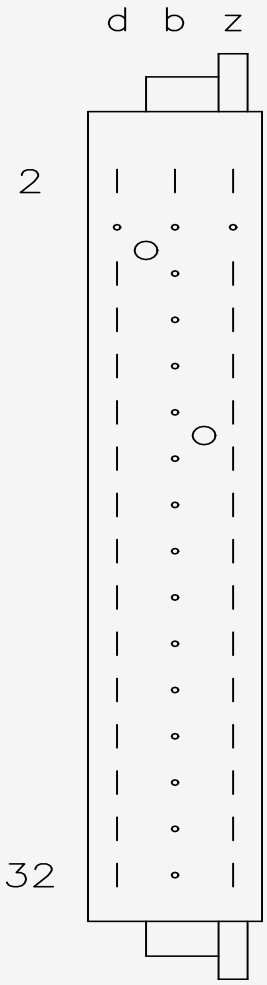


Figure 10-43: Back view and pin allocation of the SDO-0424 module connector

d2	WDG
d4	–
d6	Supply 24 V DC ext.
d8	Supply 24 V DC int.
d10	
d12	OUT 1+
d14	OUT 1+
d16	OUT 2+
d18	OUT 2+
d20	OUT 3+
d22	OUT 3+
d24	OUT 4+
d26	OUT 4+
d28	(0 V DC)
d30	Supply 0 V DC
d32	Supply 24 V DC ext.
b2	GND
z2	VCC
z4	–
z6	Supply 24 V DC ext.
z8	Supply 0 V DC
z10	

z12	OUT 1–
z14	OUT 1–
z16	OUT 2–
z18	OUT 2–
z20	OUT 3–
z22	OUT 3–
z24	OUT 4–
z26	OUT 4–
z28	(0 V DC)
z30	Supply 0 V DC
z32	Supply 24 V DC ext.

10.9.3 Connection examples

The figures below show a number of connection examples for the safe digital output module SDO-0424.

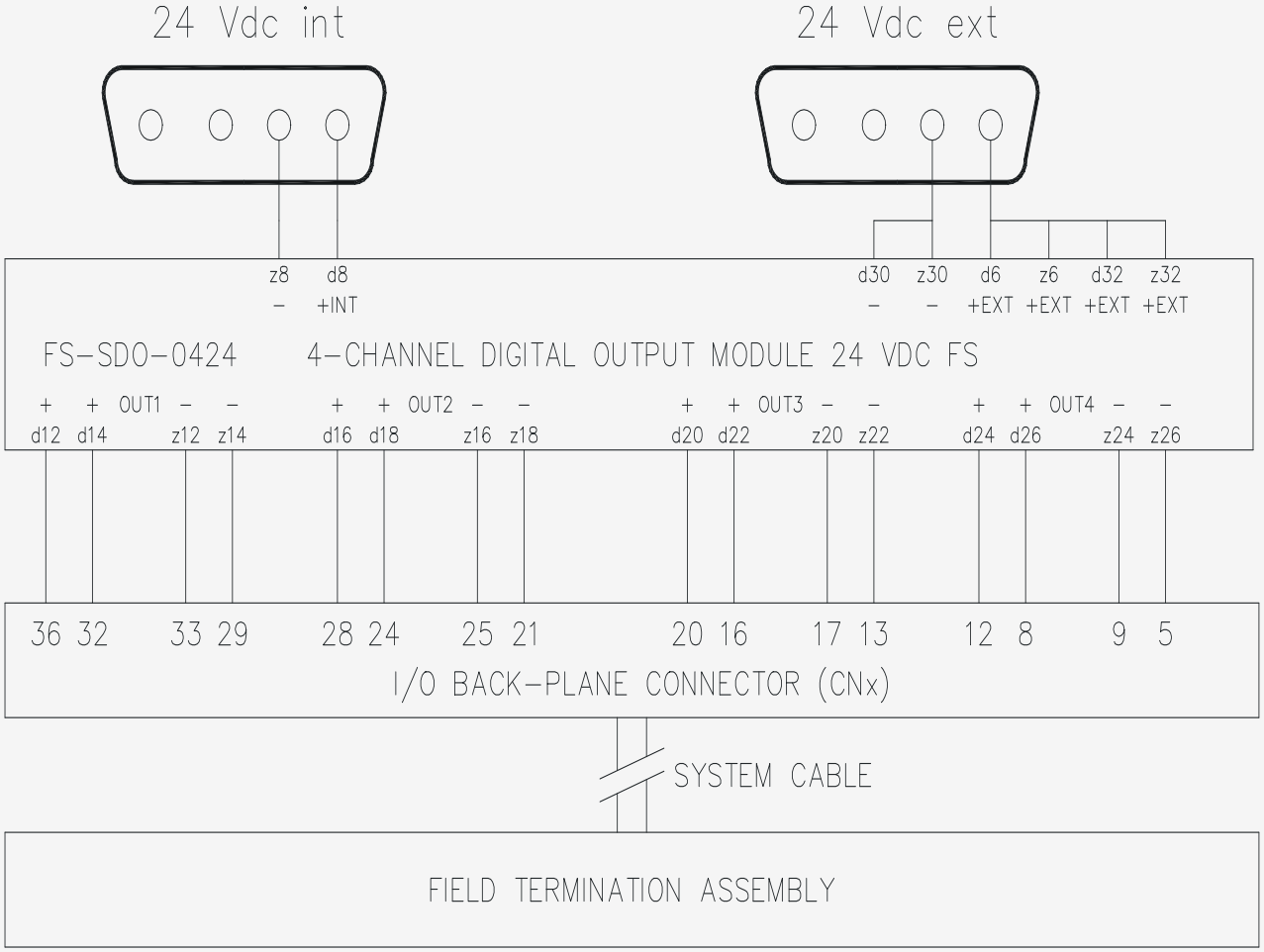


Figure 10-44: Connection example of SDO-0424 module to FTA for both non-redundant and redundant IO configurations

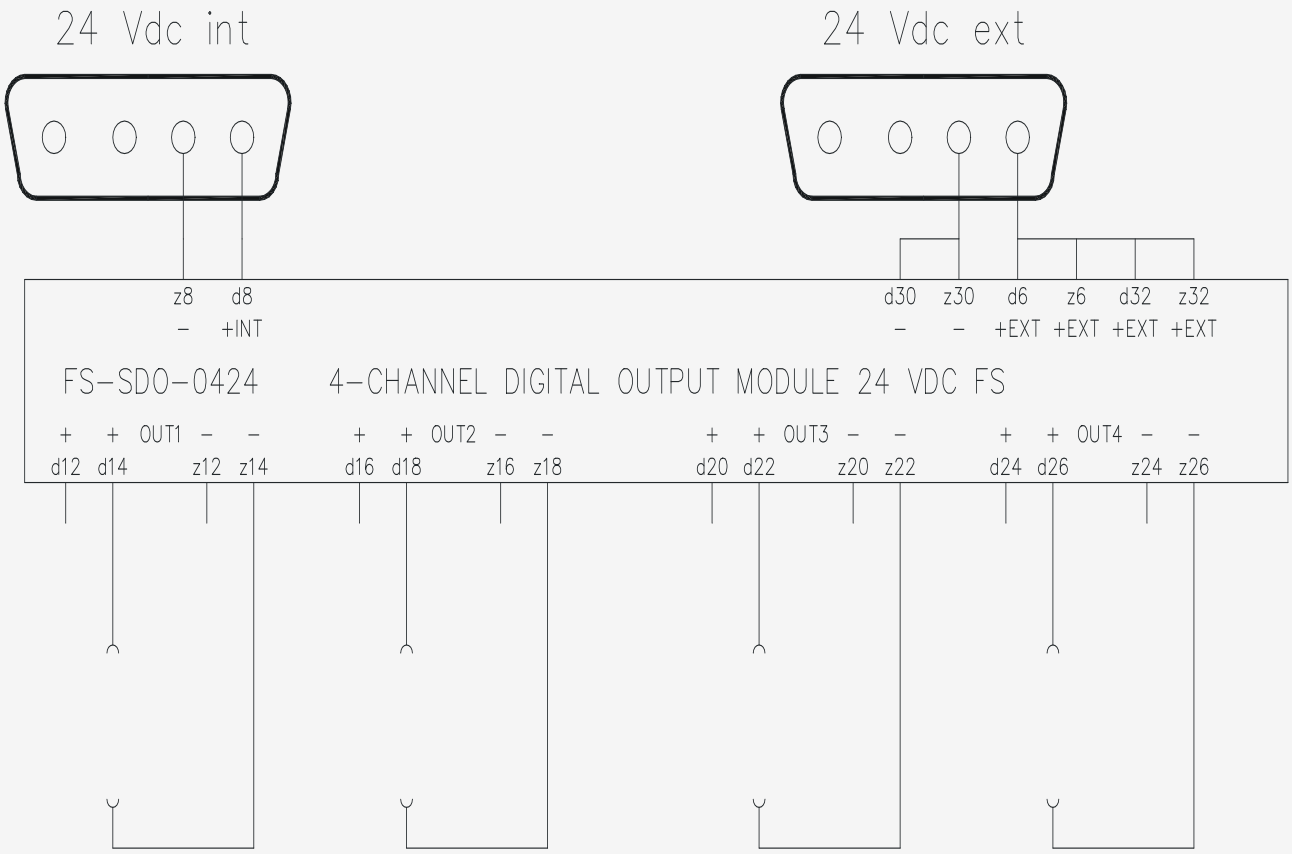


Figure 10-45: IO connection example for SDO-0424 module for non-redundant IO configurations

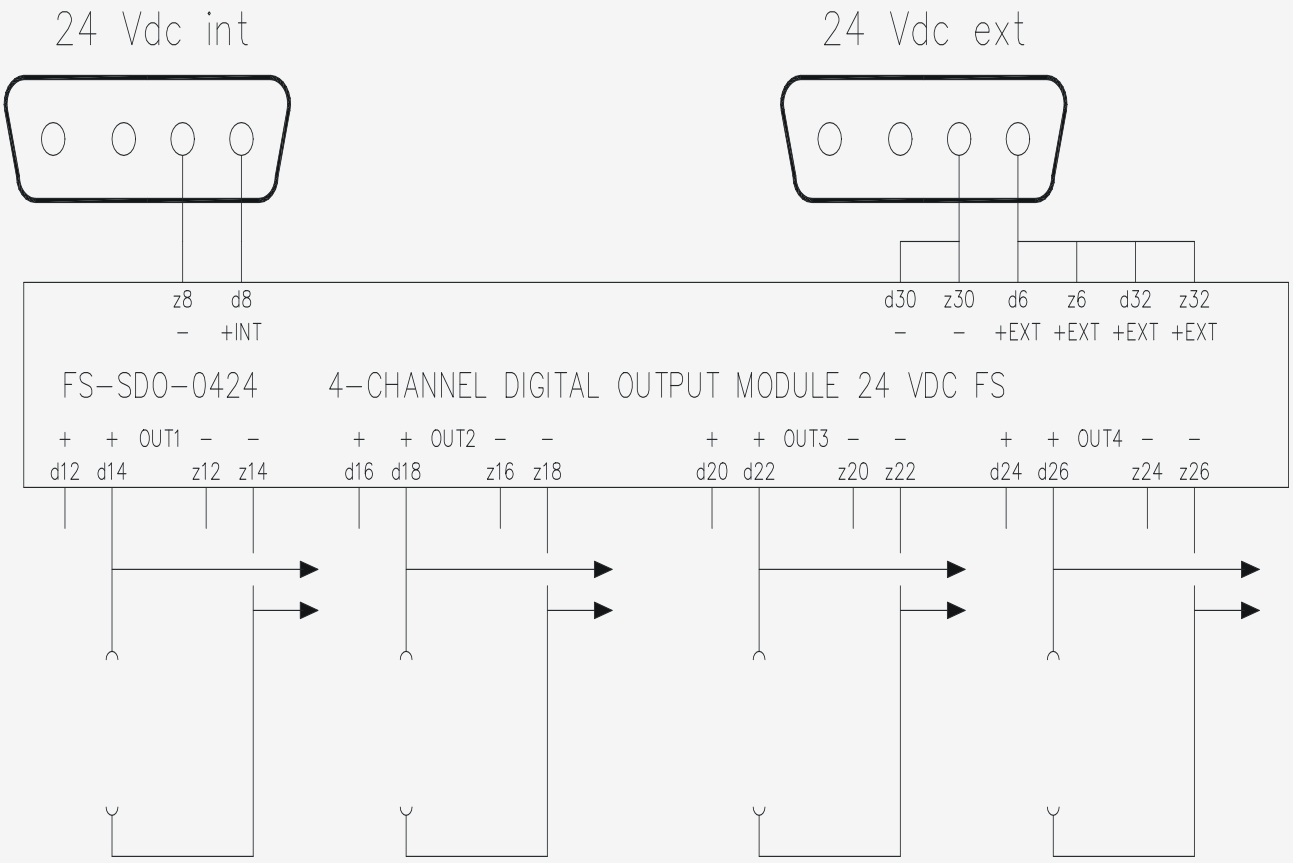


Figure 10-46: IO connection example for SDO-0424 module for redundant IO configurations

Note:
The 24 V DC internal and external power supplies must be connected to both output groups to prevent fault detection during self-testing of the output module (pins d6/z6, d8, d30/z30 and d32/z32).

General	Type numbers:	FS-SDO-0424
		FC-SDO-0424
	Approvals:	CE, TUV, UL, CSA
	Space requirements:	4 TE, 3 HE (= 4 HP, 3U)
Power	Power requirements:	5 V DC, 12 mA
		24 V DC internal, 35 mA
		24 V DC external, 50 mA (without output load)
Output	Number of output channels:	4 (2 groups of 2)
	Output specification:	24 V DC solid-state source, short-circuit proof
	Maximum channel current:	2 A
		(see General information about output modules)
	Maximum total module load:	6 A (module dissipation limit)
	Maximum lamp load:	417 mA (10 W)
	Maximum load capacitance:	1 µF
	Voltage drop:	< 1.3 V DC at 2 A
	Off current:	< 0.1 mA
	WDG input current:	8 mA
Key coding	(See section Key coding)	
	Module code:	
	• Holes	A13, C5
	Chassis code:	
	• Large pins	A13, C5