

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

HONEYWELL

10310/2/1

EARTH LEAKAGE DETECTOR

Used with the applicable Honeywell Safety Manager systems configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: HONEYWELL official manufacturer documentation

13 Modules for special functions

This chapter describes about the number of modules for special functions that are available in addition to the modules for processors, and the input and output converter modules for Safety Manager.

13.1 10310/2/1

13.1.1 Earth leakage detector (ELD)

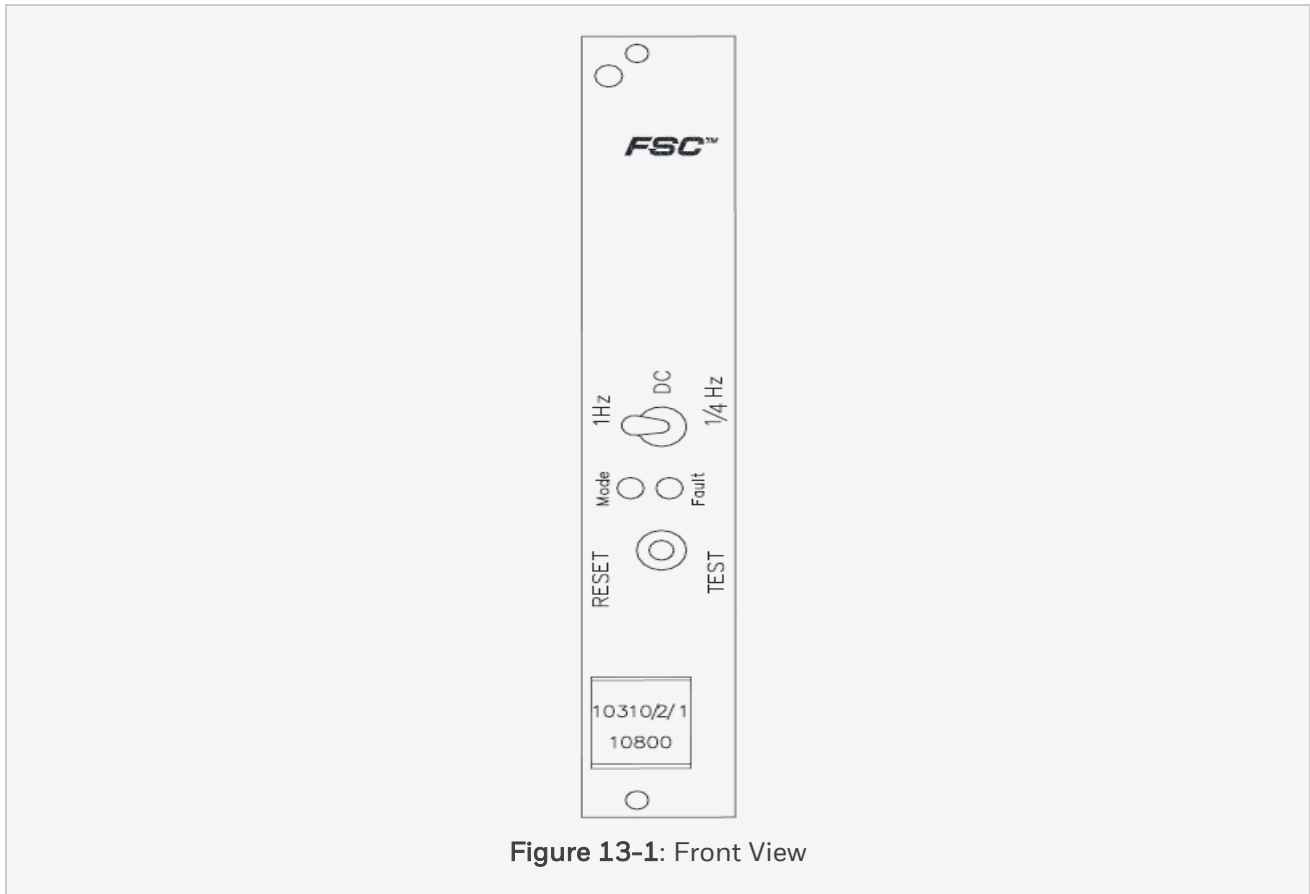
The 10310/2/1 module is an earth leakage detector (ELD) for 24 V DC systems. It has a manually operated self-test and earth connection monitor (switch 2 in 'TEST' position).

The ELD can be used to monitor:

- 24 V DC, 48 V DC and/or 60 V DC systems, or
- 110 V DC systems.

13 Modules for special functions

13.1 10310/2/1



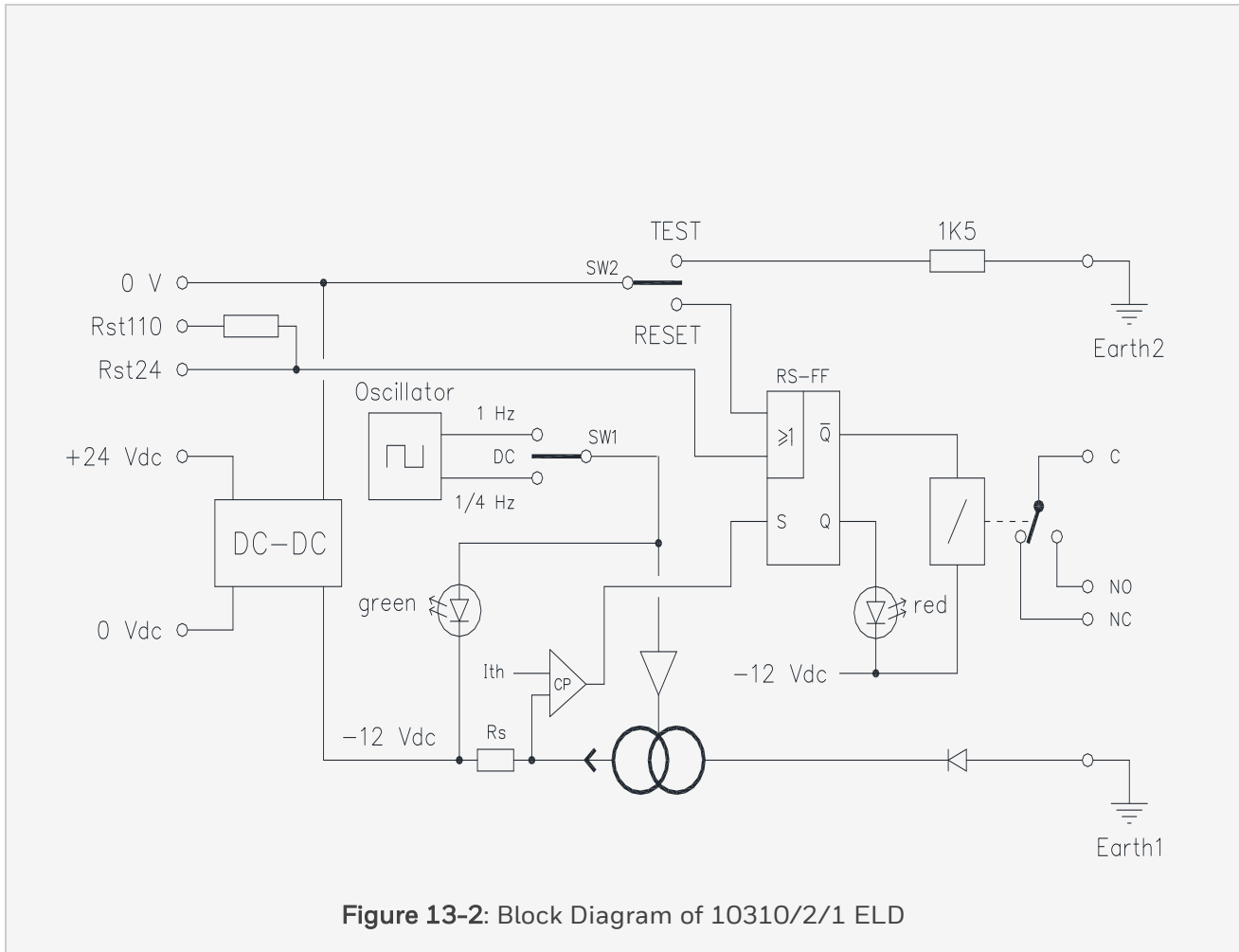
The ELD module connects earth level with -12 V DC (referenced to the 0 V connection of the 24, 48, 60 and/or 110 V DC supply). This connection is:

- Continuous (switch 1 in 'DC' position), or
- Interrupting at 1 Hz (switch 1 in '1 Hz' position), or
- Interrupting at 0.25 Hz (switch 1 in '1/4 Hz' position).

With switch 1 in the '1 Hz' or '1/4 Hz' position, the green 'MODE' LED on the module front flashes at the selected connection frequency.

Switch 1 is normally used in the 'DC' position.

The '1 Hz' position should only be used to accommodate for solenoids or relays that could stay energized by the negative earth voltage. The '1/4 Hz' position can be used for locating earth faults. Locating earth faults requires a current clamp (e.g. the DCM300E digital clamp from AVO International).



An earth fault sets the flip-flop (FF), and de-energizes the relay. The flip-flop remains set until a reset is given. This can be done in three ways:

- Manually (by setting switch 2 to 'RESET' position), or
- By a high level at the Rst24 input, or
- By a high level at the Rst110 input.

The ELD module can be tested by connecting a 1.5 kOhm resistor between 0 V and earth. This should set the flip-flop. A 1.5 kOhm resistor in the ELD with its own connection to earth (on the Earth2 pin) allows testing of the ELD and the earth connection (switch 2 in 'TEST' position). A disconnected Earth1-to-Earth2 link will block the flip-flop set action (because no earth current is flowing).

13 Modules for special functions

13.1 10310/2/1

13.1.2 Earth fault for digital inputs

An earth fault to an input wire with an open field contact (10101/2/.) can only be detected if the 10101/A/1 digital input reverse diode module is used. For details refer to this module's data sheet.

13.1.3 Connection examples

The figures below show two connection examples of the 10310/2/1 ELD module.

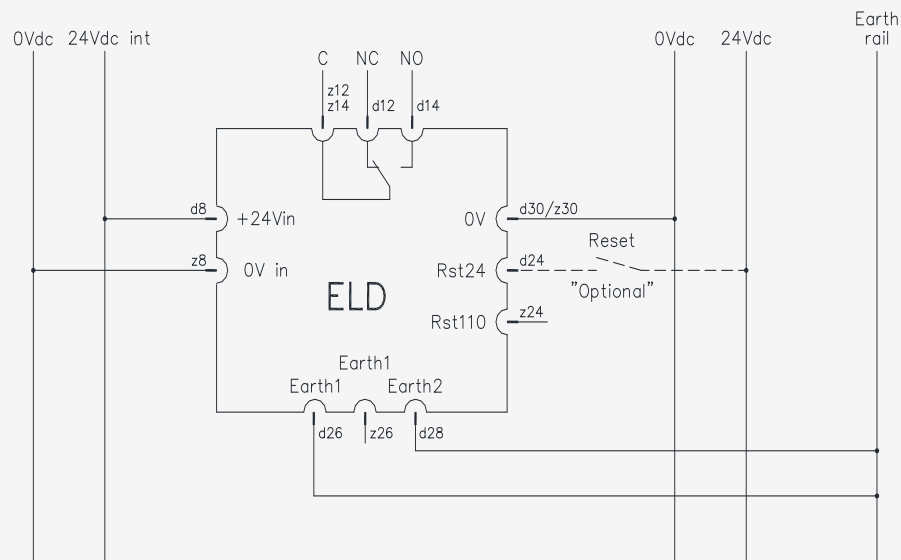
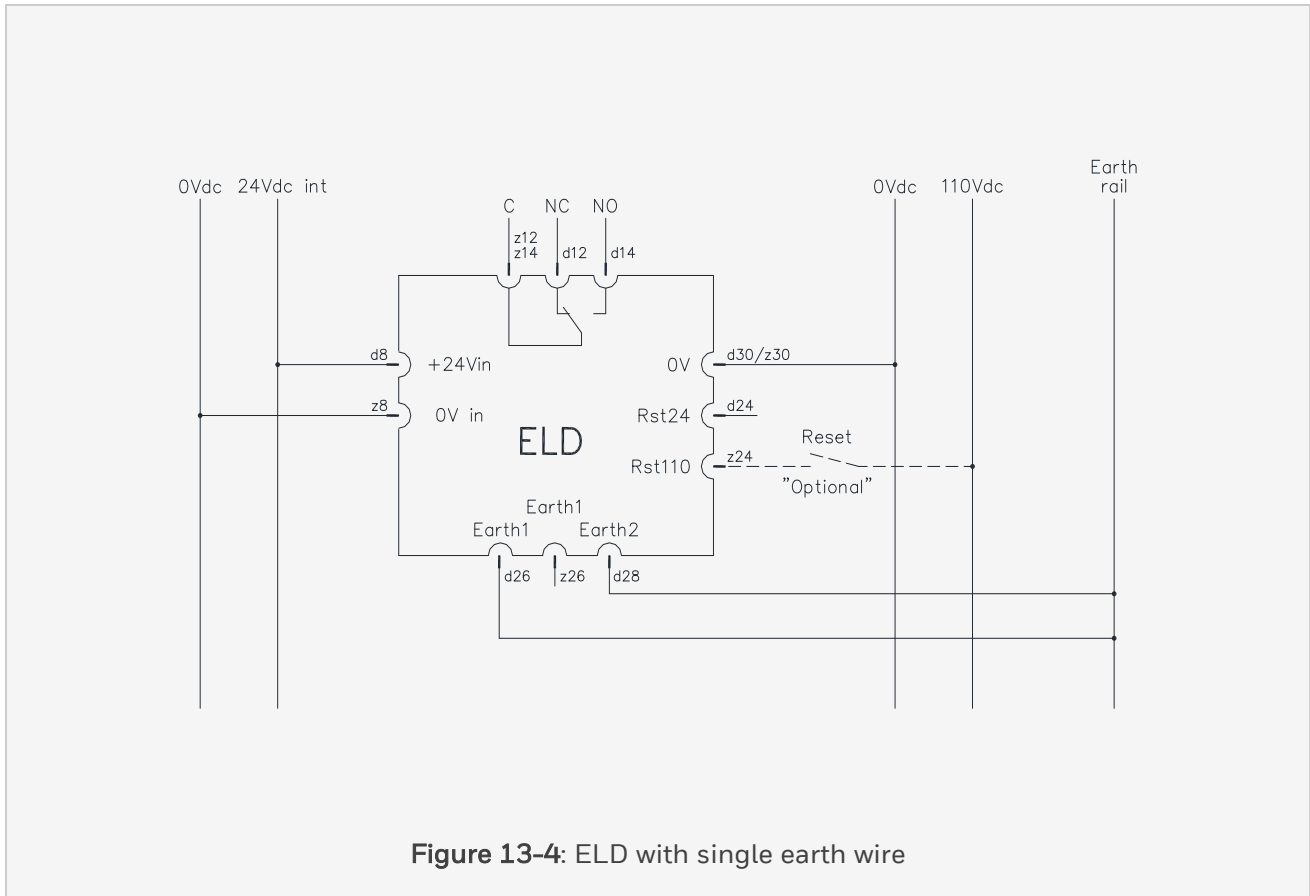


Figure 13-3: 24 V DC with 48 V DC or 60 V DC monitoring



13.1.4 Pin Allocation

The back view and pin allocation of the 10310/2/1 module connector are as follows:

13 Modules for special functions

13.1 10310/2/1

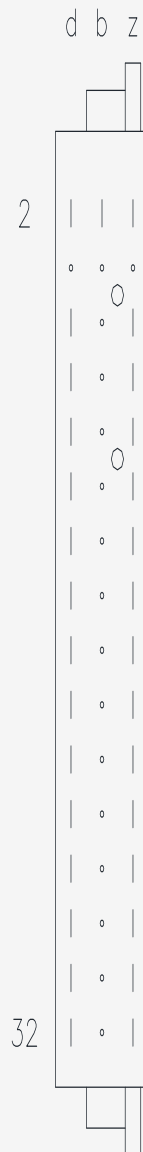


Figure 13-5: Back view and pin allocation of the 10310/2/1 module connector

13.1.5 Technical data

The 10310/2/1 module has the following specifications:

13 Modules for special functions

13.1 10310/2/1

General	Type number:	10310/2/1 10800
	Approvals:	CE, UL
Power	Supply voltage:	24 V DC (max. 30 V DC)
	Supply current:	max. 60 mA
	Rst24 input voltage:	18...70 V DC
	Rst110 input voltage:	40...130 V DC
	Rst24 input current:	1.1 mA at 24 V DC
	Rst110 input current:	2.5 mA at 110 V DC
Earth	Earth voltage:	-12 V DC (no earth fault)
	Earth fault threshold:	-30...+125 V DC (earth fault)
	Max. earth current:	5.5 mA (± 1 mA) 25.0 mA (± 5 mA)
Output contact	Max. output voltage:	115 V DC
	Max. output current:	2 A
Relay contacts	Initial contact resistance:	
	Max. current:	30 mOhm
	Max. switched voltage:	5A
	Max. switched load:	250 V DC / 250 V AC 100 W / 1000 VA
	Expected life:	
• Electrical • Mechanical		100,000 switch operations 200,000,000 switch operations

Key coding	(See 'Key coding' data sheet)	
	Module code:	
	• Holes	A5, A11
	Rack code:	
	• Large pins	A5, A11