

Complies with EN81

DATA SHEET

- ❖ Safe contact for bridging doors & locks during levelling & re-levelling.
- ❖ Safe contact consists of 2 contacts operated by separate relays.
- ❖ Safe operation, one welded internal contact will cause the device to fail **open!**
- ❖ Circuit based on industrial safety relays.
- ❖ Operates only in door zone area at low speed.
- ❖ Complies with EN81-14.2.1.2.

Description

The SF2 is an independent module that provides a safe switching device (contact) for bridging or shunting of car doors, landing doors and locks when the car is moving with the doors open for levelling, re-levelling and anti-creeping in the unlocking zone at low speed.

The switching device (contact) consists of two independent internal contacts from two on-board separate industrial relays. If one of these contacts gets welded the switching device (contact) will stay **open** and will no longer operate.

The SF2 operates only at the unlocking zone (door zone) and only when the car is travelling at low speed.

The SF2 accepts input signals from three **normally open** magnetic sensors:

1. LU - Levelling up magnetic sensor.
2. LD - Levelling down magnetic sensor.
3. DZ - Door zone (unlocking zone) magnetic sensor.

The SF2 accepts also an enabling signal (F) from the elevator's fast contactor to verify that the elevator is not at high speed. This input is tied to +24V through a N.C. contact of fast contactor.

The SF2 operates according to the following truth table:

Input				Output	Comments
LU	LD	DZ	F		
1	0	1	1	1	
0	1	1	1	1	
1	1	1	1	0	Exactly at floor level
X	X	X	0	0	F overrides
X	X	0	X	0	DZ overrides
In all other logic states output is zero.				0	

Sensors (LU, LD, DZ):

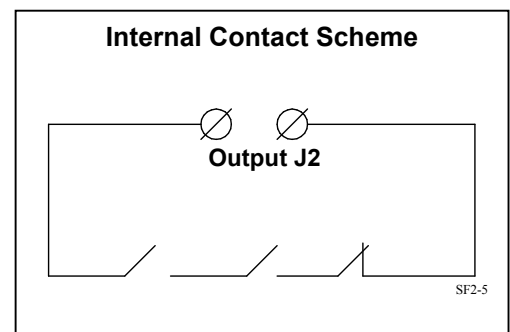
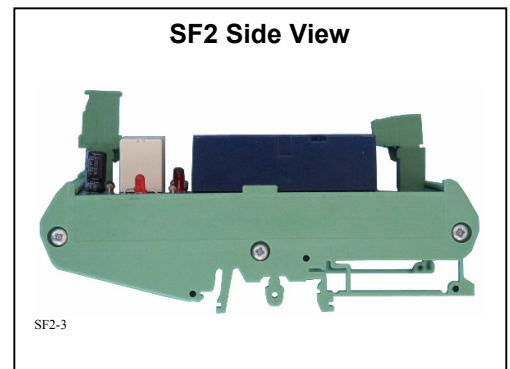
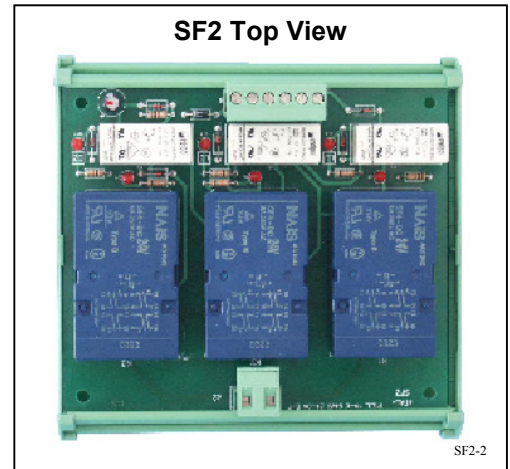
- 1 = Sensor in front of magnet.
- 0 = Sensor not in front of magnet.
- X = Don't care.

Input F:

- 1 = +24V is applied.
- 0 = Open, left floating.

Output:

- 1 = Contact closed.
- 0 = Contact open.



Input/Output Description**Definitions:**

Active input = +24VDC (or DCm) is applied to input.
 Inactive input = Input is open (left floating).
 DCm = rectified unfiltered voltage.

24V	24V	Power supply positive input, 24VDC or 24VDCm.
GND	GND	Power supply return input.
F	Fast	This input should be inactive when elevator is running at high speed and should be active when running at low speed.
LU	Levelling Up	This input should be active when LU magnetic sensor is activated when re-levelling upwards.
LD	Levelling Down	This input should be active when LD magnetic sensor is activated when re-levelling downwards.
DZ	Door Zone	This input should be active when DZ magnetic sensor is activated.

LED Diagnostics:

LED Name	Description
LU	Indicates that relay LU and magnetic sensor are active.
LD	Indicates that relay LD and magnetic sensor are active.
DZ	Indicates that relay DZ and magnetic sensor are active.
D7	Indicates that safety relay K3 is active.
D8	Indicates that safety relay K1 is active.
D9	Indicates that safety relay K2 is active.

Technical Data:

Power supply voltage : 24 VDC or 24VDCm (DCm = rectified unfiltered).
 Power supply current : 100 mA.
 Input voltage, F, LU, LD, DZ : 24 VDC or 24VDCm (DCm = rectified unfiltered).
 Input current, F, LU, LD, DZ : 20mA.

Switching Device (Contact) Data:

The following data is given for electrical resistive loads only.

Nominal switching capacity : 6A 250VAC, 1.5A 110VDCm (DCm = rectified unfiltered), 6A 30VDC.
 Max switching power : 1500 VA, 180W.
 Max switching voltage : 440VAC, 200VDCm (DCm = rectified unfiltered), 30VDC.
 Max carrying current : 1.5A.
 Initial breakdown voltage, Between open contacts : 1300Vrms.
 Between contact and coil : 2500Vrms.
 Between contact set : 2500Vrms.
 Contact material : Gold flashed silver alloy.

Expected Life: Mechanical: 10 operations min. Electrical: 10 operations min.

General Information:

Operate time : 35ms max.
 Release time : 20ms max.
 Ambient temperature : -10°C to +70°C
 Humidity : 5% to 85% RH
 Mounting : DIN rail mounting
 Weight : 450gr

Ordering Information:

SF2	With plastic retainer
SF2-N	Without plastic retainer

