

Safety Relay Board FGR 50 / FGR 52

Universal DIN-Rail Mount Board with one or two force guided relays

Standard Characteristics

FGR 50: DIN-Rail mount Relay Board for conventional wiring with ONE 4 or 6-pole FGR, HENGSTLER, KACO or DOLD relay in following contact set arrangements:

- 510 5 make (NO) / 1 break (NC)
- 420 4 make (NO) / 2 break (NC)
- 330 3 make (NO) / 3 break (NC)
- 310 3 make (NO) / 1 break (NC)
- 220 2 make (NO) / 2 break (NC)

FGR 52: DIN-Rail mount Relay Board for conventional wiring with TWO 4 or 6-pole FGR, HENGSTLER, KACO or DOLD relay in following contact set arrangements:

- 510 5 make (NO) / 1 break (NC) each
- 420 4 make (NO) / 2 break (NC) each
- 330 3 make (NO) / 3 break (NC) each
- 310 3 make (NO) / 1 break (NC) each
- 220 2 make (NO) / 2 break (NC) each

- All Boards are provided with LED function indications and suppression Diodes.
- All Boards can be mounted on a DIN-JEN-TS32 or TS35 rails.
- Connector cross section 0.08 to 2.5 mm² (AWG 28 to AWG 14).
- Overall dimensions depend on unit and relay types. See dimension tables on next pages.
- Boards are available for nominal voltages 5 VDC to 110 VDC.
- Maximum current rating:
 - 6 A (H-463 & K-ROS)
 - 8 A (FGR35, D-OA56.11 & .12)
 - 10 A (H-462, D-OA56.01 & .02)
- Maximum voltage rating: 230/240 VAC / 300 VDC
- Operating temperature range / °C (°F): -25 to +80 °C (-13 to +176 °F)

Standard Contact Materials

- Silver Cadmium oxide, gold-flashed AgCdO / 0.2 µm Au
- Silver Cadmium oxide, gold-plated AgCdO / 2 µm Au
- Other contact materials are available upon a special request

Custom Safety Relay Boards

FGR is capable of providing our valuable customers with custom solutions that meet almost every demand.

- Boards with three or more Force Guided Relays.
- Boards with Force Guided Relays that provide different coil voltages.
- Boards with Force Guided Relays that provide different contact set arrangements.
- Custom boards that are pre-wired to consider special application and function requirements.

Ordering Example

- **FGR50-024-310FB** designates a FGR DIN-Rail mount relay board series 50 with one FGR safety relay type FGR35 with nominal coil voltage 24 VDC and 3NO/1NC force guided contact set.
- **FGR50-110-420HS** designates a FGR DIN-Rail mount relay board series 50 with one socket mount HENGSTLER Safety Relay type H-462 with nominal coil voltage 110 VDC and 4NO/2NC force guided contact set.
- **FGR52-012-330DB** designates a FGR DIN-Rail mount relay board series 52 with two DOLD Safety Relay type OA56.12 with nominal coil voltage 12 VDC and 3NO/3NC force guided contact set.
- **FGR52-006-220KB** designates a FGR DIN-Rail mount relay board series 52 with two KACO Safety Relay type ROS with nominal coil voltage 6 VDC and 2NO/2NC force guided contact set.
- **Last 2 digits designate relay type and mounting condition. F=FGR, H=HENGSTLER, K=KACO, D=DOLD. Use B for PCB mount and S for socket mount types.**

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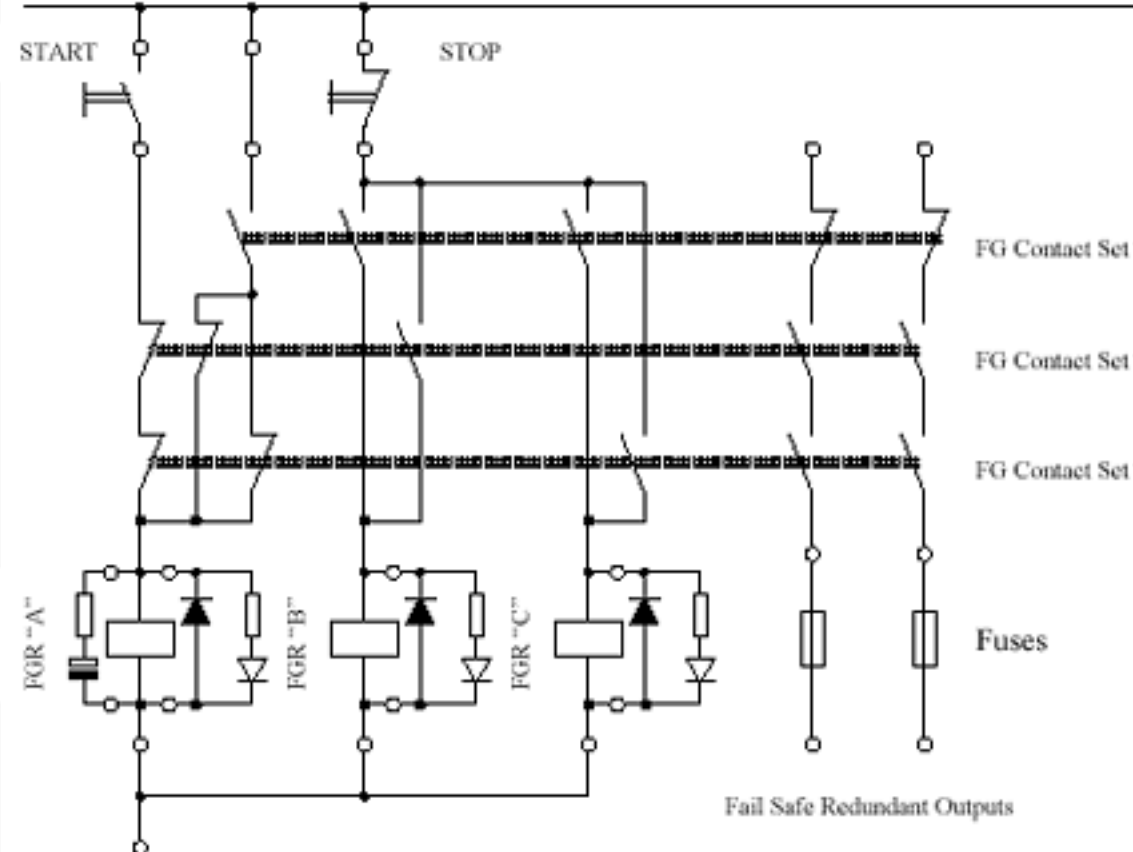
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Safety Relay Boards FGR50 / FGR52

Universal DIN-Rail Mount Board with one or two force guided relays

Basic Self-Monitoring, Fail Safe, Dual Redundant Safety Circuit Employing Force Guided Contact Features

- A proper monitored safe operation requires that FGR "B" and FGR "C" must be released before any restart.
- While "START" is actuated and the NC contacts of FGR "B" and FGR "C" are still closed, FGR "A" will be energized and take a self holding position until FGR "B" and FGR "C" are energized.
- Only a proper operation of FGR "B" and FGR "C" will result in the de-energizing of FGR "A" in order to prepare the safety circuit for the next cycle or a restart.
- A redundant safe output must contain at least one NO contact of both FGR "B" and FGR "C".
- Depending on the safety category and/or requirements, FGR "A" can be replaced by an adequate fail safe monitored actuating device.
- Do not make any parallel connections between any arc limiting or load suppressing electronic components and any force guided contact in order to maintain the force guiding feature of the contact set.
- Please connect all external auxiliaries directly to the loads.
- Function LEDs, polarity protection Diodes, time delaying capacitor across the relay coils, fuses, start and stop switches are recommended, but do not represent any binding characteristics.
- The circuit shown is a basic fail safe, self-monitored safety schematic. It's the responsibility of the end user to decide its suitability in your intended application.



3 DIN-Rail Units
FGR50-024-330FF
Coil Voltage: 24 V DC
Contact Set: 3NO / 3 NC



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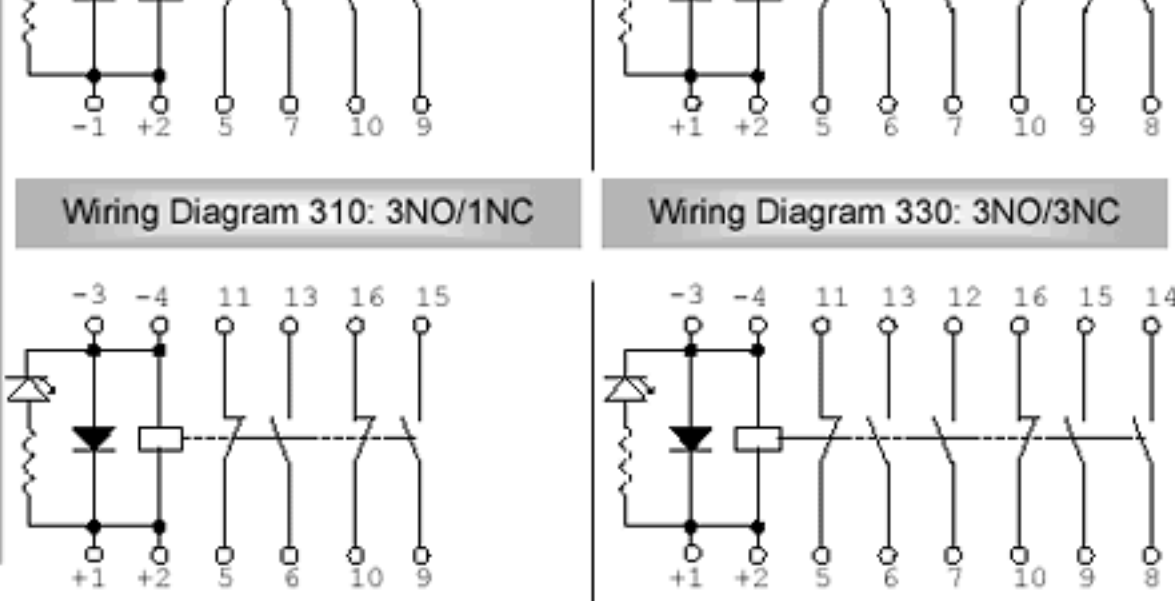
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Safety Relay Board FGR 50

Universal DIN-Rail Mount Board with one force guided relay

Wiring Diagrams for FGR50 with H-462, or D-OA 56.01 & .02 Relays

- Installation Remarks**
- Turn off all power supplies before any installation work
 - Be aware of all safety rules and guidelines of OSHA and other associations as they apply.
 - Installer and/or operator must be a qualified professional.
 - Do not demount the unit or remove any wires while relay operates.
 - Conductor cross section 0.08 to 2.5 mm² (AWG 28 to 14)



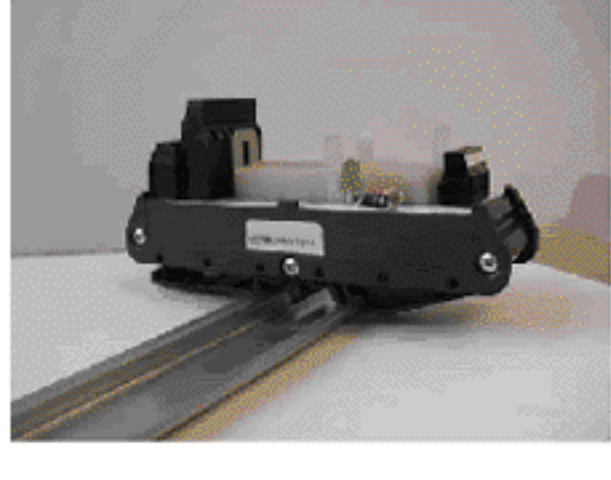
All dimensions shown are metric (mm)

For conversion:
1 mm = 0.03937 inch
1 inch = 25.40 mm

Dimensions

Width: 40.70 mm (1.62 inch)
Length: 125.20 mm (4.93 inch)
Height: See table below (depends on relay brand and relay type)

Height		PCB mount		Socket mount	
BRAND	TYPE	mm	inch	mm	inch
HENGSTLER	H-462	78.1	3.07	88.1	3.47
DOLD	OA56.01/.02	68.4	2.69	78.7	3.10



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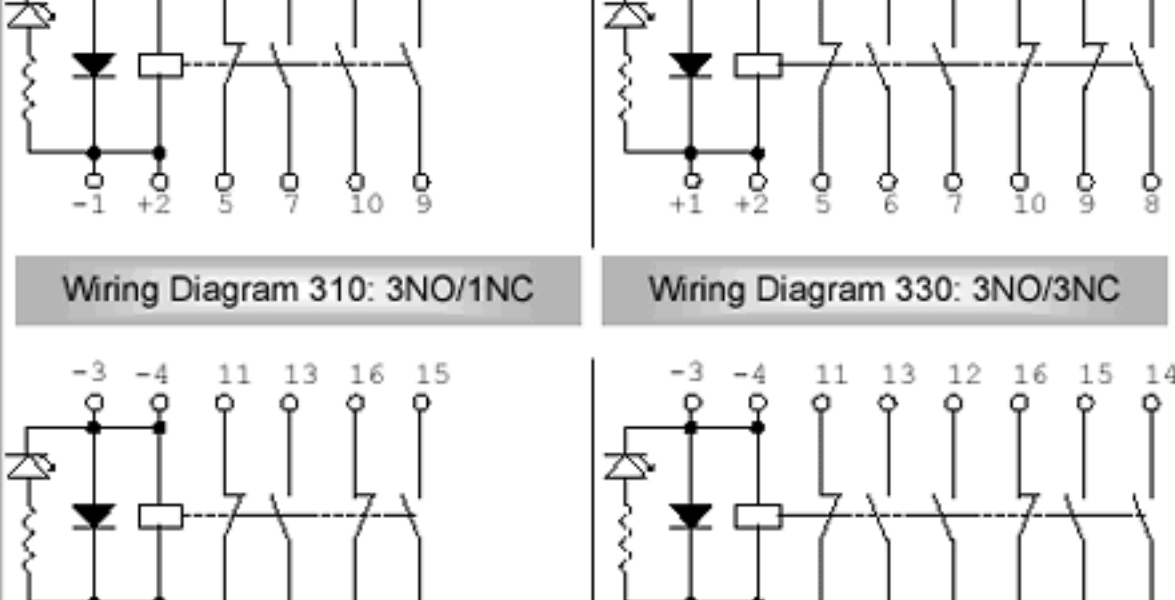
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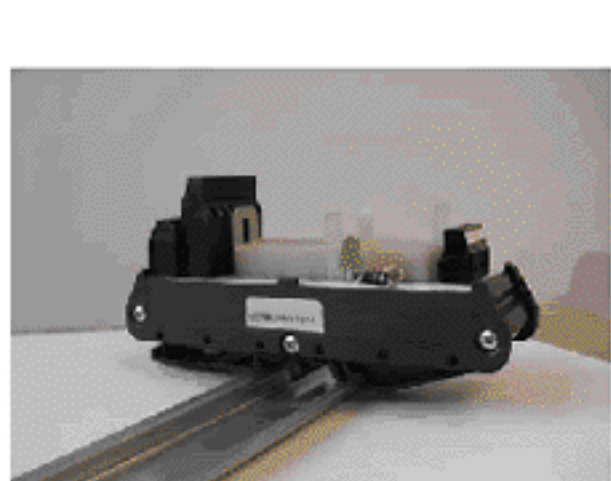
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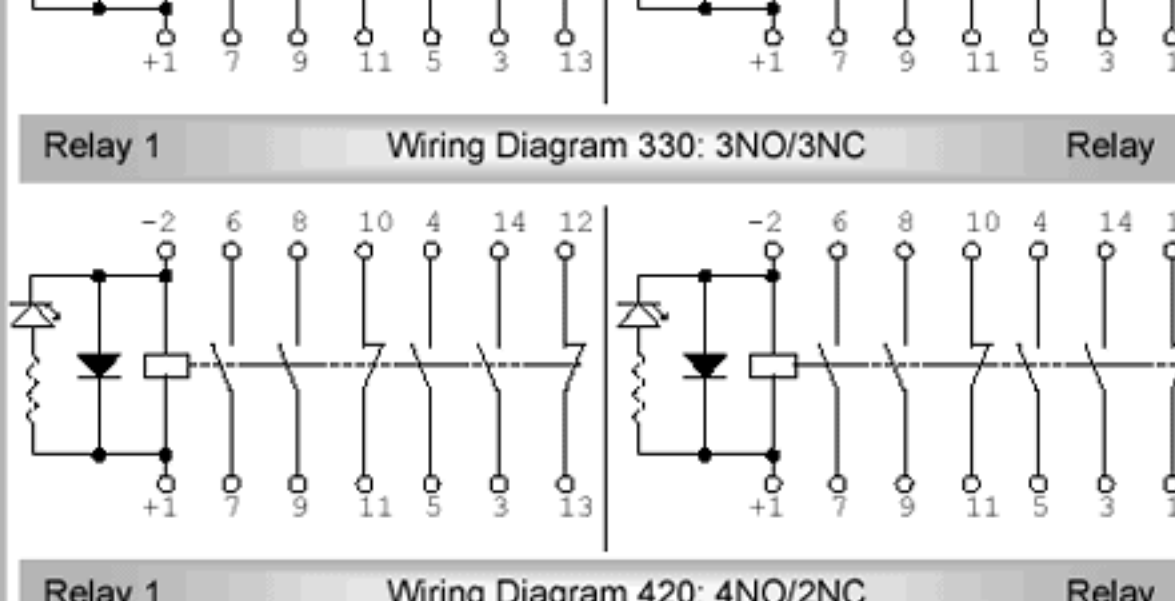
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Safety Relay Boards FGR 52-6

Universal DIN-Rail Mount Board with two 6-pole force guided Relays

Wiring Diagrams for FGR52 with FGR35-6pole and D-OA 56.12 Relays

- Installation Remarks**
- Turn off all power supplies before any installation work.
 - Be aware of all safety rules and guidelines of OSHA and other associations as they apply.
 - Installer and/or operator must be a qualified professional.
 - Do not demount the unit or remove any wires while relay operates.
 - Conductor cross section 0.08 to 2.5 mm² (AWG 28 to 14)



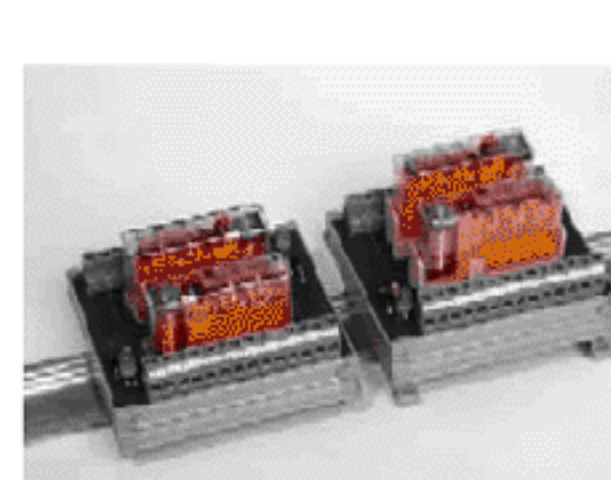
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For conversion:
1 mm = 0.03937 inch
1 inch = 25.40 mm

Dimensions

Width: 89.6 mm (3.53 inch)
Length: 92.5 mm (3.64 inch)
Height: See table below (depends on relay brand and relay type)

* Maximum unit Height		PCB mount		Socket mount	
BRAND	TYPE	mm	inch	mm	inch
FGR	FGR35-6p	61.5	2.42	71.5	2.82
DOLD	OA56.12	60.3	2.38	NA	NA



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