

# Dold UH6937

## Frequency Monitor Relays



UH6937 frequency monitoring safety relay modules monitor the output frequency of inverters or rotor frequency of slip-ring motors.

- No external sensors necessary
- Independent of direction
- Broken wire detection
- 2-channel operation for frequency monitoring
- LED status indicator
- Time delay settings available

### Safety Data – Values per EN ISO 13849-1

<b>Category</b>	4
<b>Performance level</b>	e
<b>MTTF<sub>d</sub></b>	139.6 years
<b>DC<sub>avg</sub></b>	99%

### Safety Data – Values per IEC/EN 62061/IEC/EN 61508

<b>SIL CL</b>	3
<b>SIL</b>	3
<b>HFT (Hardware Failure Tolerance)</b>	1
<b>DC<sub>avg</sub></b>	99%
<b>PFH<sub>D</sub></b>	1.9e-10

### Safety Frequency Monitor Relays Selection Chart

Part Number	Price	Marking Type	Frequency Range	Voltage	Outputs
<b>UH6937-02PS-24</b>	\$650.00	Frequency monitoring safety relay module	1-600 Hz	24VDC	2 N.O. 2 semiconductor
<b>UH6937-02PS-100-24</b>	\$650.00		1-1000 Hz		

### Safety Frequency Monitor Relays Specification Table

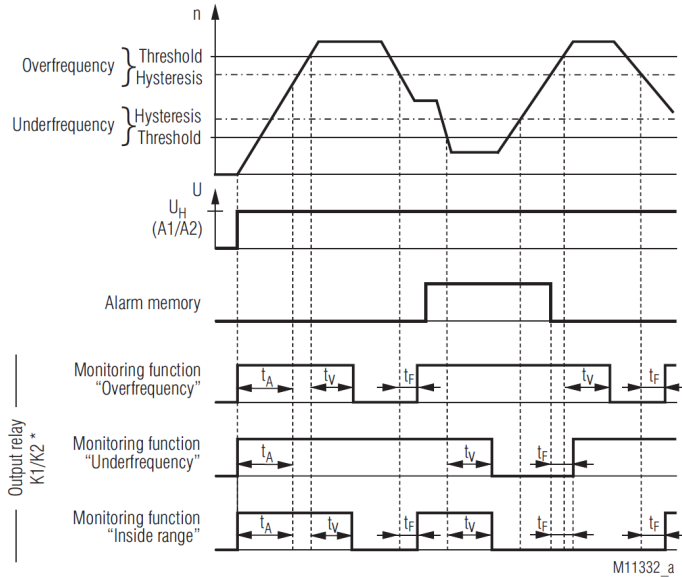
General Specifications	
<b>Temperature</b>	Storage: -20°C to 70°C (-4°F to 158°F) Operating: -20°C to 60°C (-4°F to 140°F)
<b>Altitude</b>	< 2,000m (6562ft)
<b>Vibration Resistance</b>	IEC/EN 60-068-2-6
<b>Degree of Protection</b>	Housing: IP40; Terminals IP20
<b>Housing</b>	UL 94V-0 Thermoplastic; DIN mount 35mm (1.38 in) x 7.5 mm (0.30 in)
<b>Weight</b>	320g (11.29 oz)
<b>Agency Approvals and Standards</b>	cULus file E107778, CE, RoHS, TUV
<b>Terminal Designation</b>	EN 50005
<b>Wire Fixing</b>	Captive slotted screw. Torque 0.8 Nm (7 lb-in)
Input Specifications	
<b>Nominal Voltage</b>	24VDC
<b>Measuring/Motor Voltage</b>	8 to 280 VAC for single phase 16 to 690 VAC for three-phase
<b>Response Value U<sub>an</sub></b>	Variant /0_ : adjustable from 1-600Hz Variant /1_ : adjustable from 1-1000Hz
<b>Voltage Range</b>	0.8-1.1 VDC
<b>Nominal Consumption</b>	3.2W
<b>Nominal Frequency</b>	-
<b>Overvoltage Protection</b>	Internal VDR (Voltage Dependent Resistor)
Output Specifications	
<b>Electrical Contact Life</b>	To AC15 at 3A, 230V: 22x10 <sup>5</sup> switching cycles IEC/EN 60 947-5-1
<b>Mechanical Life</b>	20 x 10 <sup>6</sup> switching cycles
<b>Contact Type</b>	2 N.O. positively driven and 2 semiconductor outputs for monitoring
<b>Operate Delay on Standstill</b>	Depends on setting; adjust by potentiometer
<b>Release Delay on Overspeed</b>	t <sub>off</sub> = typ. 700 ms
<b>Nominal Output Voltage</b>	250VAC
<b>Thermal Current (I<sub>th</sub>)</b>	Max. 8A per contact. See continuous current limit curve in installation manual.
<b>Short Circuit Strength</b>	Max fuse rating: 10A gI (IEC/EN 60 9470-5-1)
<b>Switching Capacity IEC/EN 60 947-5-1</b>	AC15: N.O. contacts: 2A/230V; DC13 2A/24V
<b>Switching Frequency</b>	Max. 1,200 switching cycles/hr
<b>Semiconductor Monitoring</b>	100mA DC 24V; supply via A3+/A4

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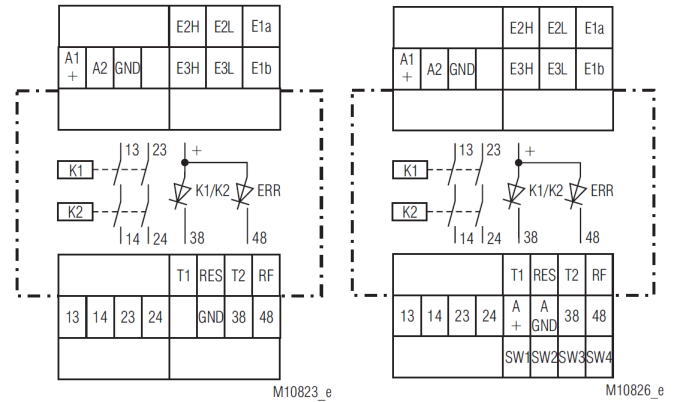
### Function Diagram



$t_A$  = Start-up delay,  $t_v$  = Alarm delay,  $t_F$  = Reset delay

\* Depending on the direction of rotation monitoring

### Block Diagram

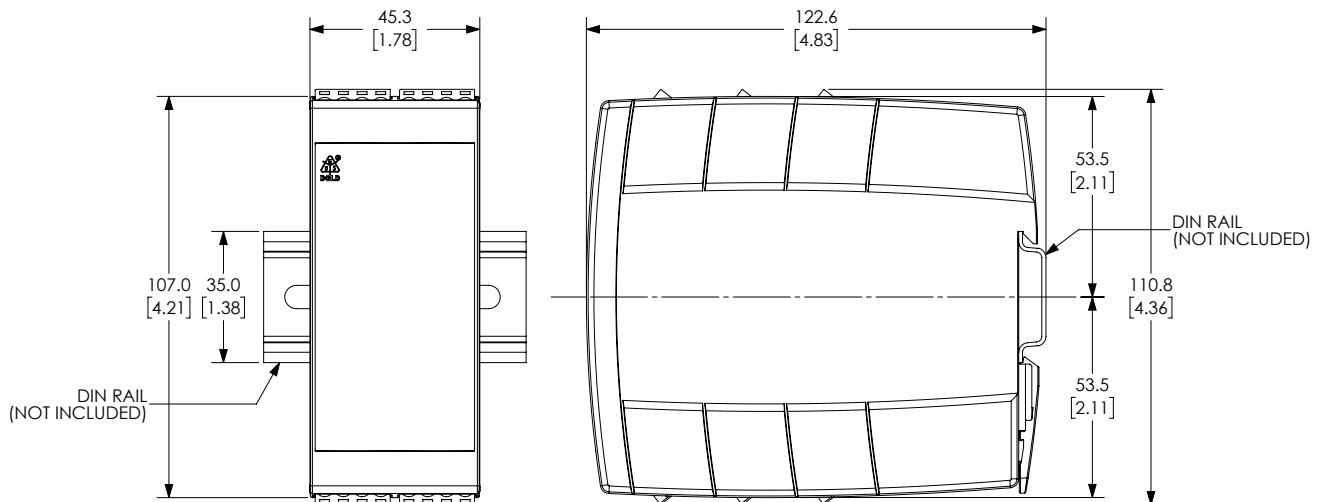


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### Dimensions

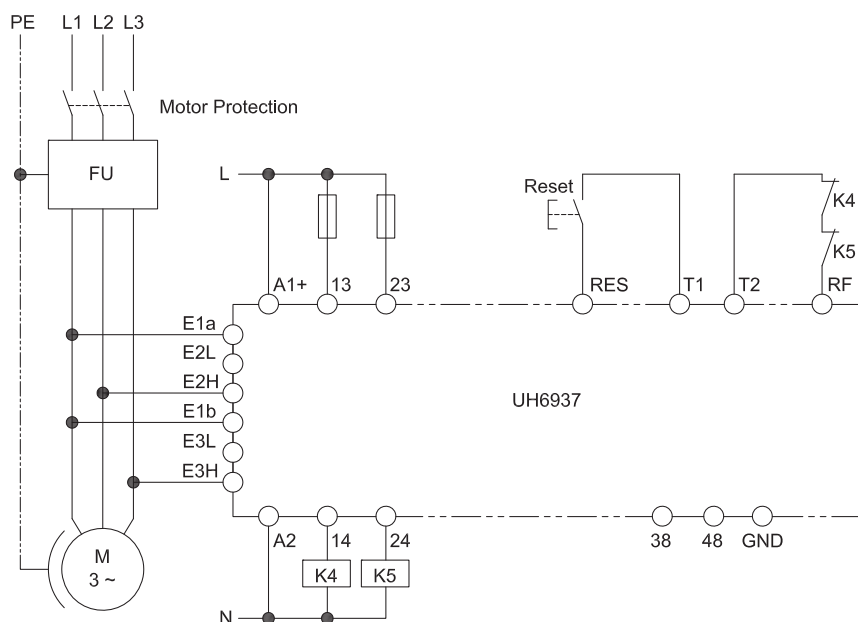
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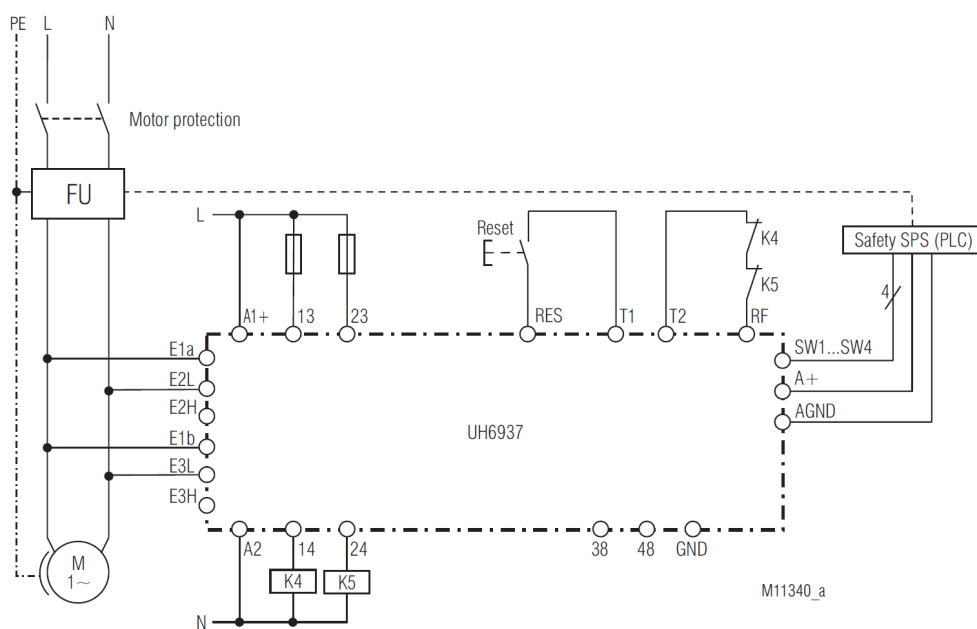
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## Application Examples



**Inverter monitoring function, 3-phase, suited up to SIL3, Performance Level e, Cat. 4**



**Inverter monitoring function, single-phase, suited up to SIL3, Performance Level e, Cat. 4**

# Safety Products



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