

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

Category	4
Performance level	e
MTTF_d	139.6 years
DC_{avg}	99%

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

SIL CL	3
SIL	3
HFT (Hardware Failure Tolerance)	1
DC_{avg}	99%
PFH_D	1.9e-10

Safety Frequency Monitor Relays Selection Chart

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

Safety Frequency Monitor Relays Specification Table

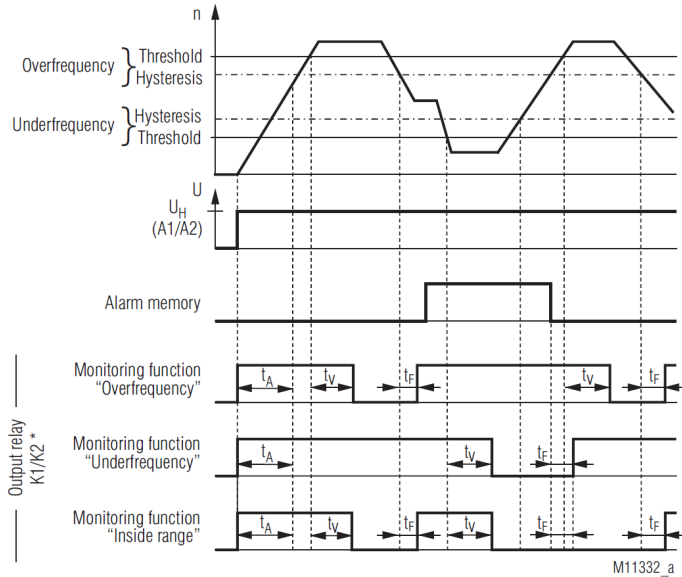
General Specifications	
Temperature	Storage: -20°C to 70°C (-4°F to 158°F) Operating: -20°C to 60°C (-4°F to 140°F)
Altitude	< 2,000m (6562ft)
Vibration Resistance	IEC/EN 60-068-2-6
Degree of Protection	Housing: IP40; Terminals IP20
Housing	UL 94V-0 Thermoplastic; DIN mount 35mm (1.38 in) x 7.5 mm (0.30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

Dold UH6937

Frequency Monitor Relays



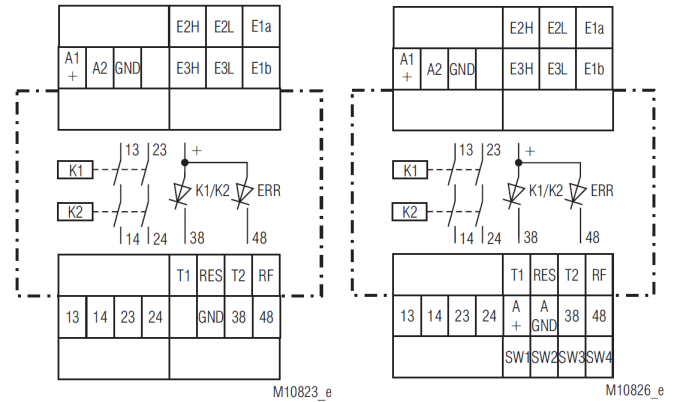
Function Diagram



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

* Depending on the direction of rotation monitoring

Block Diagram

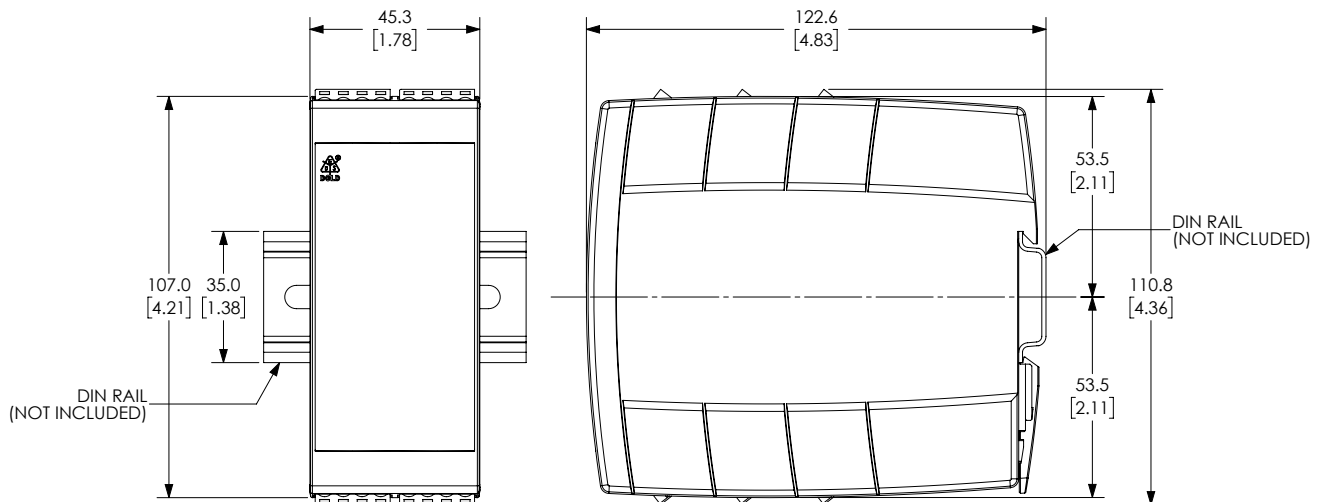


UH 6937

UH 6937/_ _1

Dimensions

mm [in]

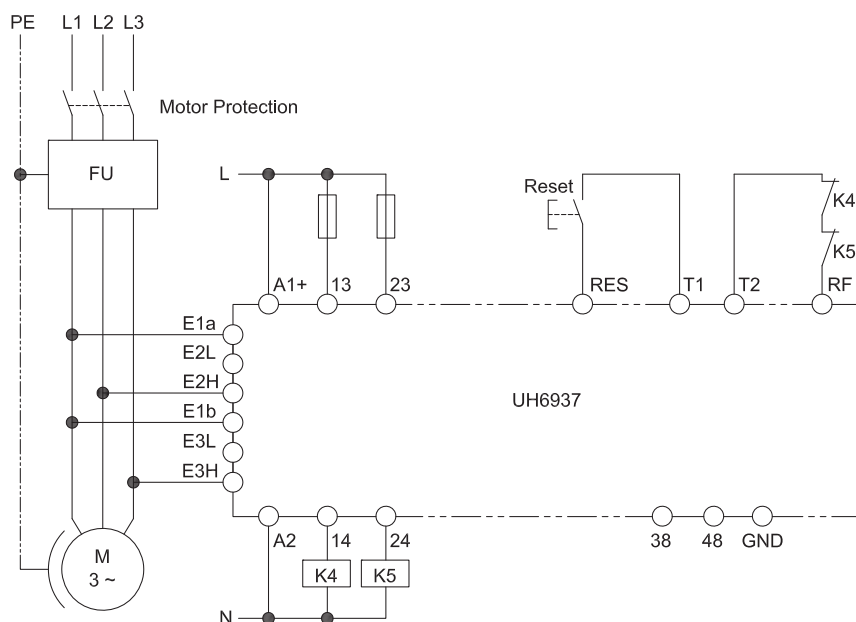


Dold UH6937

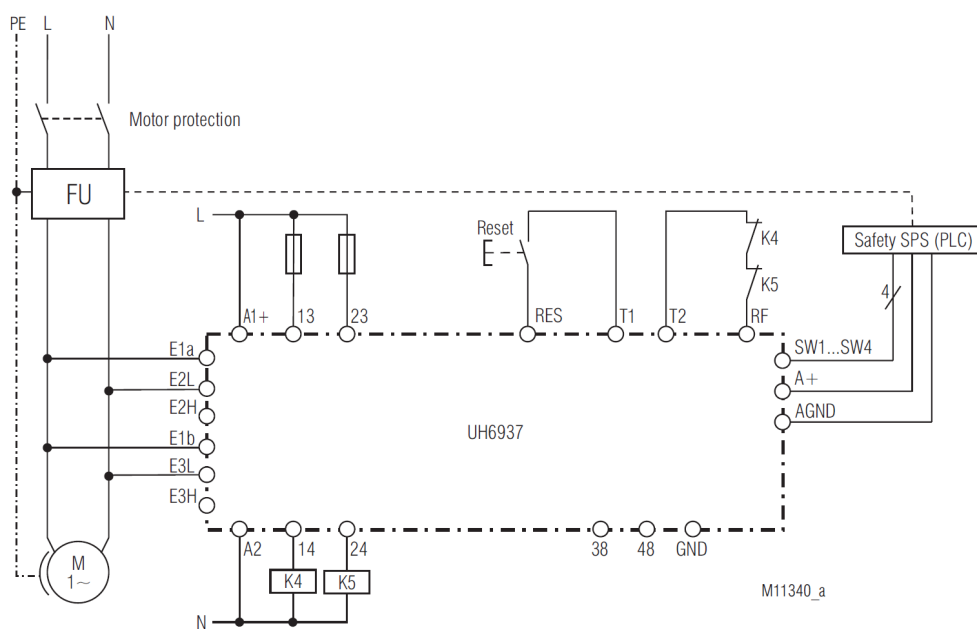
Frequency Monitor Relays



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



Warning: Safety products sold by AutomationDirect are Safety components only. The purchaser/installer is solely responsible for the application of these components and ensuring all necessary steps have been taken to assure each application and use meets all performance and applicable safety requirements and/or local, national and/or international safety codes as required by the application. AutomationDirect cannot certify that our products, used solely or in conjunction with other AutomationDirect or other vendors' products, will assure safety for any application. Any person using or applying any products sold by AutomationDirect is responsible for learning the safety requirements for their individual application and applying them, and therefore assumes all risks, and accepts full and complete responsibility, for the selection and suitability of the product for their respective application.

AutomationDirect does not provide design or consulting services, and cannot advise whether any specific application or use of our products would ensure compliance with the safety requirements for any application.