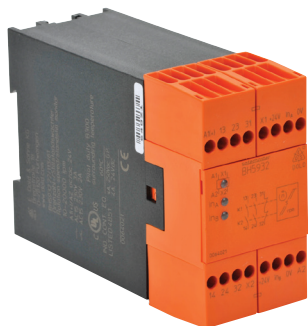


# Dold BH5932 Speed Monitor Relays **DOLD**



BH5932 speed monitoring safety relay modules use inputs from proximity sensors that are detecting rotating targets on the motor that needs monitoring.

- Energized when speed is under setting value
- Two PNP sensor inputs
- 10 to 20,000 IPM (impulses per minute) adjustable range
- Monitors rotation and linear movement
- 2-channel operation for standstill and over-speed monitoring
- 2 N.O. and 1 N.C. positive-guided contacts
- LED status indicators

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

<b>Category</b>	<b>3 according to EN 954-1</b>
<b>Performance level</b>	PLe according to EN 13849-1
<b>MTTF<sub>d</sub></b>	>273 years
<b>DC<sub>avg</sub></b>	99%

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

<b>SIL CL</b>	3 per IEC/EN 62061
<b>SIL</b>	3 per IEC/EN 61508
<b>HFT (Hardware Failure Tolerance)</b>	1
<b>DC<sub>avg</sub></b>	99%
<b>SFF</b>	99.7%
<b>PFH<sub>D</sub></b>	1.69E <sup>-10</sup> h <sup>-1</sup>

### Safety Speed Monitor Relays Selection Chart

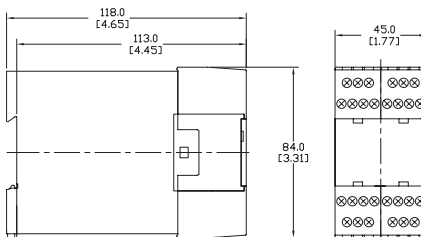
Part Number	Price	Marking Type	Voltage	Outputs
<a href="#">BH5932-22-113-24</a>		Speed-monitoring safety relay module	24 VAC/VDC	2 NO and 1 NC
<a href="#">BH5932-22-113-120</a>		Please consider <a href="#">BH5932-22-113-24</a> as a comparable replacement.		
<a href="#">BH5932-22-113-230</a>		Please consider <a href="#">BH5932-22-113-24</a> as a comparable replacement.		

### Safety Speed Monitor Relay Module Specification Table

General Specifications	
<b>Temperature</b>	Storage: -25°C to 85°C (-13°F to 185°F) Operating: -25°C to 60°C (-13°F to 140°F)
<b>Altitude</b>	< 2000m (6562ft)
<b>Vibration Resistance</b>	Amplitude: 0.35mm, Frequency: 10 to 55 Hz (IEC/EN 60-068-2-6)
<b>Degree of Protection</b>	Per IEC/EN 60 529. Housing: IP40; Terminals IP20
<b>Housing</b>	UL 94V-0 Thermoplastic; Din mount 35 mm x 7.5 mm
<b>Weight</b>	410g (14.46 oz)
<b>Agency Approvals and Standards</b>	cULus file E107778, CE, RoHS
<b>Terminal Designation per EN 50 005 Wire Connections</b>	1x4 mm <sup>2</sup> solid or 1 x 2.5 mm <sup>2</sup> stranded ferruled (isolated) or 2 x 1.5 mm <sup>2</sup> stranded ferruled (isolated) DIN 46 228-1/-2/-3/-4 or 2 x 2.5 mm <sup>2</sup> solid per DIN 46 228-1/-2/-3 /-4
<b>Wire Fixing</b>	Plus-minus terminal screws M3.5 box terminals with wire protection. Torque 0.8N•m (0.59 lb•ft)
Input Specifications	
<b>Nominal Voltage</b>	24V AC/DC, 110 VAC, 239VAC
<b>Voltage Range</b>	AC: 0.85 to 1.1 UN. At 10% residual ripple: 0.9 to 1.1 UN; At 48% residual ripple: 0.85 to 1.1 UN DC: 0.9 to 1.1 UN. At 10% residual ripple: 0.9 to 1.1 UN; At 48% residual ripple: 0.85 to 1.1 UN
<b>Nominal Consumption</b>	ca. 4VA, 2.5W
<b>Nominal Frequency</b>	50 to 60 Hz. Frequency range: 45 to 65 Hz
<b>Control Current</b>	Control current typ. at 24V over 2 relays: 75mA
<b>Overvoltage Protection</b>	Internal VDR (Voltage Dependent Resistor)
<b>Sensor Inputs</b>	24VDC; 25mA max./3 mA min. per channel.; 1ms On/1ms Off min. pulse time; 30,000 lpm max. at inputs INA and INB
Output Specifications	
<b>Electrical Contact Life</b>	To AC15 at 2A, 230V: 3x10 <sup>5</sup> switching cycles IEC/EN 60 947-5-1
<b>Mechanical Life</b>	M50 x 10 <sup>6</sup> switching cycles
<b>Contact Type</b>	2 NO positively driven and 1 NC relay contacts (NO contacts are safety contacts)
<b>Operate Delay on Standstill</b>	Depends on setting; see manual and supplement
<b>Release Delay on Overspeed</b>	t <sub>off</sub> = typ. 350ms
<b>Nominal Output Voltage</b>	250VAC
<b>Thermal Current (I<sub>th</sub>)</b>	Max. 4A per contact. See continuous current limit curve in installation manual.
<b>Short Circuit Strength</b>	Max fuse rating: 4A gl (IEC/EN 60 9470-5-1)
<b>Switching Capacity IEC/EN 60 947-5-1</b>	AC 15: NO contacts: 3A/230V; NC contacts: 2A/230VAC
<b>Switching Frequency</b>	Max. 1200 switching cycles/hr

## Dimensions

mm [in]

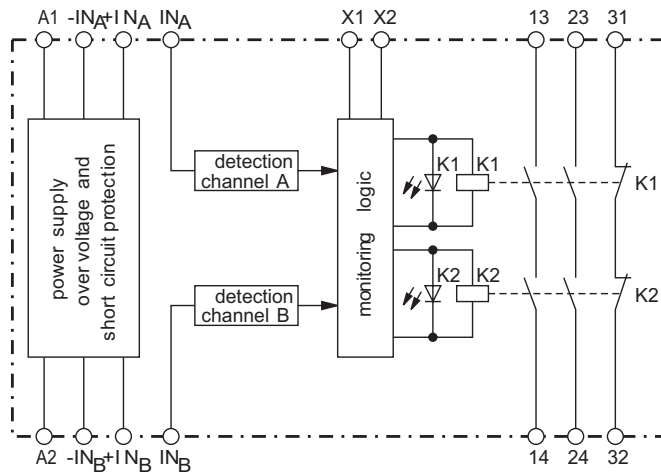


# Dold BH5932 Speed Monitor Relays

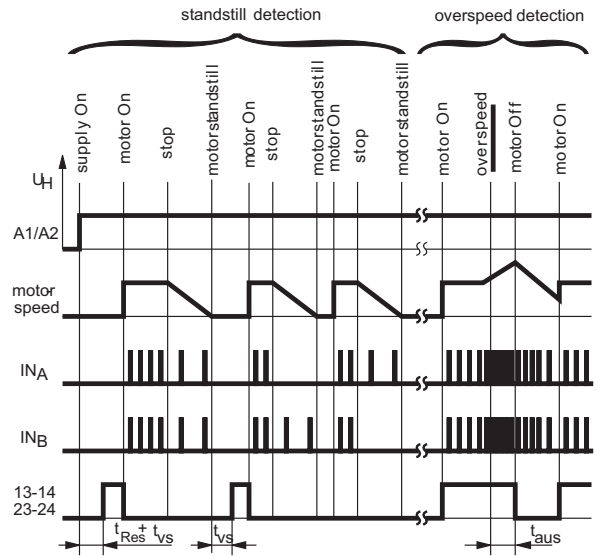


## Wiring

**BH5932 Block Diagram**



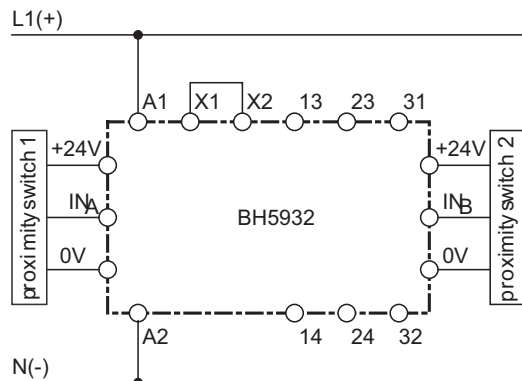
## Function diagram



$t_{Res}$ : reset time after connection of supply voltage  
 $t_{vs}$ : operate delay after detection of standstill/underspeed  
 $t_{aus}$ : release delay after detection of overspeed

## Application

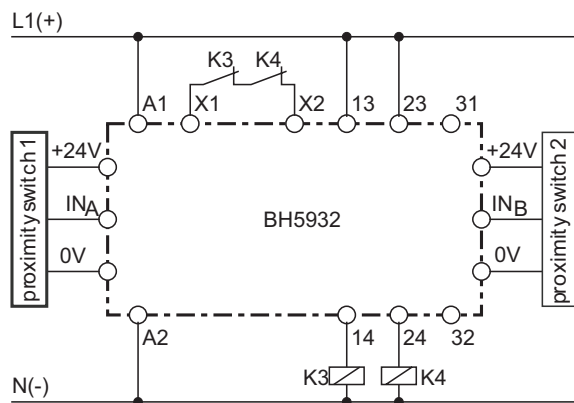
**Two PNP Proximity Sensors Monitoring a 3-Phase Motor**



**Standard connection**

### Connection Terminals

Terminal designation	Signal designation
A1 (+)	+ / L
A2	- / N
X1, X2	Feedback circuit
+24V	+ supply for proximity sensors 1 e. g. 2
0V	- supply for proximity sensors 1 e. g. 2
INA, INB	measuring output of proximity sensors 1 e. g. 2
13, 14, 23, 24	Positive driven NO contacts for release circuit
31, 32	Positive driven NC contacts for release circuit



**Connection with external contactors**

# 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.*

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