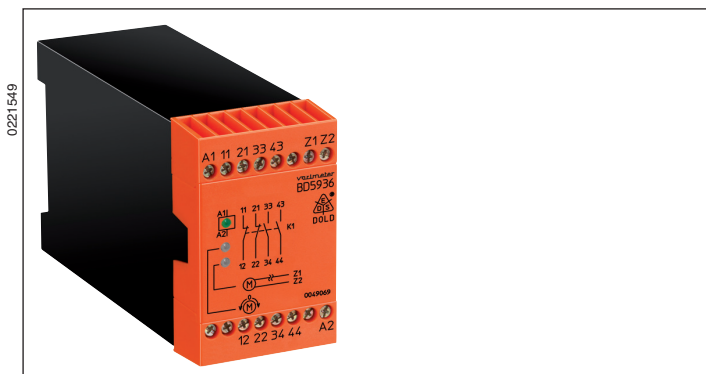


## VARIMETER Standstill Monitor BD 5936



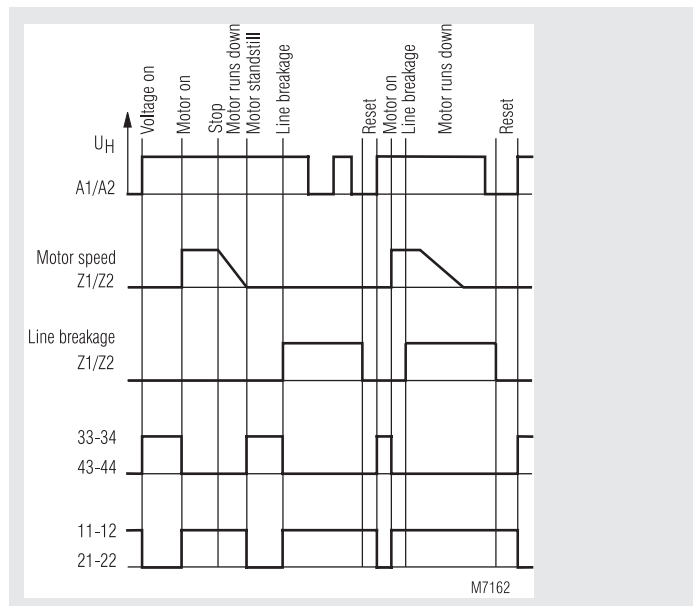
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### Product Description

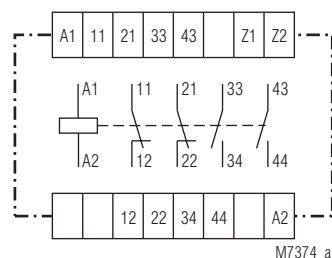
The BD 5936 detecting standstills of 3- and 1-phase asynchronous motors. At 2 terminals of the stator winding the BD 5936 measures the voltage of the slowing motor which has been induced. If the induction voltage approaches 0 this indicates that the device is at a standstill and the output relay is activated.

Additional the monitor detects strand breaks between measurement inputs Z1 / Z2. If a line breakage is detected, the output relay goes into the normal position (as when the motor is running). This state is saved and can only be cleared by (briefly) switching off the auxiliary voltage.

### Function Diagram



### Circuit Diagrams



### Your Advantage

- Standstill monitoring without sensor

### Features

- According to IEC/EN 60255-1, IEC/EN 60255-26
- For standstill monitoring of 3- and 1-phase asynchronous motors
- Line breakage detection in the measurement circuit
- Forcibly guided output contacts:  
2 NO, 2 NC contacts for 250 V AC
- LED indicators for motor standstill, line breakage, and operating voltage
- Wire connection: also 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> stranded ferruled DIN 46 228-1/-2/-3
- Width 45 mm

### Approvals and Markings



\* see variants

### Applications

For detecting standstills of 3- and 1-phase asynchronous motors, for example, for releasing protective door interlocks of machine tools or for activating stopping brakes.

### Notes

In the case on the motor wires the Z1 / Z2 connection wire should be installed separately from the motor supply and connected directly to the motor terminals. For longer distances please use twisted pair wires.

### Indicators

- 1st green LED: comes on when operating voltage present
- 2nd green LED: comes on when motor at a standstill
- Red LED: comes on in event of line breakage between Z1 and Z2

### Connection Terminals

Terminal designation	Signal designation
A1, A2	Auxiliary voltage $U_H$
Z1, Z2	Measuring input (connection on motor)
11, 12, 21, 22	Forcibly guided NC contacts
33, 34, 43, 44	Forcibly guided NO contacts

### Technical Data

#### Input

**Auxiliary voltage  $U_H$ :** AC 24, 48, 110, 120, 230 V, AC/DC 24 ... 60 V, 110 ... 230 V (other voltages on request)

**Voltage range:** 0.8 ... 1.1  $U_N$   
**Nominal consumption:** approx. 3 VA, 3 W  
**Nominal frequency:** 50 / 60 Hz  
**Measurement/motor voltage:** AC 690 V  
**Response value:** approx. 20 mV  
**Release value:** approx. 40 mV

## Technical Data

### Output

#### Contacts

BD 5936.17:	2 NO, 2 NC contacts	
<b>Contact type:</b>	relay, forcibly guided	
<b>Output rated voltage:</b>	250 V AC	
<b>Thermal current <math>I_{th}</math>:</b>	5 A	
<b>Switching capacity</b> to AC 15:		IEC/EN 60 947-5-1
NO contact:	3 A / AC 230 V	
NC contact:	2 A / AC 230 V	
<b>Electrical life</b> to AC 15 at 2 A, AC 230 V:	10 <sup>6</sup> switching cycles	IEC/EN 60 947-5-1
<b>Short circuit strength</b> <b>max. fuse rating:</b>	6 A gL	IEC/EN 60 947-5-1
<b>Mechanical life:</b>	10 x 10 <sup>6</sup> switching cycles	

### General Data

<b>Operating mode:</b>	Continuous operation
<b>Temperature range:</b>	- 15 ... + 55 °C at max. 90 % air humidity

### Clearance and creepage distances

rated impulse voltage / pollution degree, Terminals Z1/Z2:		IEC 60 664-1
at AC-Auxiliary voltage $U_H$ :	6 kV / 2 (Overvoltage category III)	
at AC/DC-Auxiliary voltage $U_H$ :	4 kV / 2 (Overvoltage category II)	

### EMC

Electrostatic discharge:	8 kV (air)	IEC/EN 61 000-4-2
HF irradiation:	10 V/m	IEC/EN 61 000-4-3
Fast transients:	2 kV	IEC/EN 61 000-4-4
Surge voltages between wires for power supply: between wire and ground: HF-wire guided	2 kV 4 kV 10 V	IEC/EN 61 000-4-5 IEC/EN 61 000-4-5 IEC/EN 61 000-4-6

### Interference suppression

Auxiliary voltage AC:	Limit value class B	EN 55 011
Auxiliary voltage AC/DC:	Limit value class A*)	EN 55 011

\*) The device is designed for the usage under industrial conditions (Class A, EN 55011).  
When connected to a low voltage public system (Class B, EN 55011) radio interference can be generated. To avoid this, appropriate measures have to be taken.

### Degree of protection:

Housing:	IP 40	IEC/EN 60 529
Terminals:	IP 20	IEC/EN 60 529

**Housing:** Thermoplastic with V0 behaviour  
to UL Subj. 94

<b>Vibration resistance:</b>	Amplitude 0,35 mm frequency 10 ... 55 Hz	IEC/EN 60 068-2-6
	15 / 055 / 04	IEC/EN 60 068-1

### Climate resistance:

**Terminal designation:** EN 50 005

<b>Wire connection:</b>	1 x 4 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> stranded ferruled DIN 46 228-1/-2/-3
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**Line attachment:** Plus-minus terminal screws M 3,5 box  
terminal with wire protection

<b>Mounting:</b>	DIN rail	IEC/EN 60 715
<b>Weight:</b>	325 g	

### Dimensions

<b>Width x height x depth:</b>	45 x 74 x 121 mm
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## UL-Data

### Switching capacity:

<b>NO contacts:</b>	Pilot duty A300 10A 250Vac G.P. 10A 24Vdc
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<b>NC contacts:</b>	10A 250Vac G.P. 10A 24Vdc
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Technical data that is not stated in the UL-Data, can be found in the technical data section.

## CCC-Data

<b>Thermal current <math>I_{th}</math>:</b>	5 A	
<b>Switching capacity</b> to AC 15:	2 A / AC 230 V	IEC/EN 60 947-5-1
to DC 13:	1 A / DC 24 V	IEC/EN 60 947-5-1



Technical data that is not stated in the CCC-Data, can be found in the technical data section.

## Standard Type

BD 5936.17/001	AC 230 V	50/60 Hz
Article number:	0049069	
• Output:	2 NO, 2 NC contacts	
• Auxiliary voltage $U_H$ :	AC 230 V	
• With automatic reset for broken wire detection		
• Width:	45 mm	

## Variants

BD 5936.17:	without automatic reset for broken wire detection
BD 5936.17/61:	with UL-approval (Canada/USA)
BD 5936:	with CCC-approval on request

## Ordering example for variants

BD 5936	.17	/	---	AC 230 V	50 / 60 Hz	
						Nominal frequency
						Auxiliary voltage
						Variant, if required
						Contacts
						Type

## Connection Examples

