

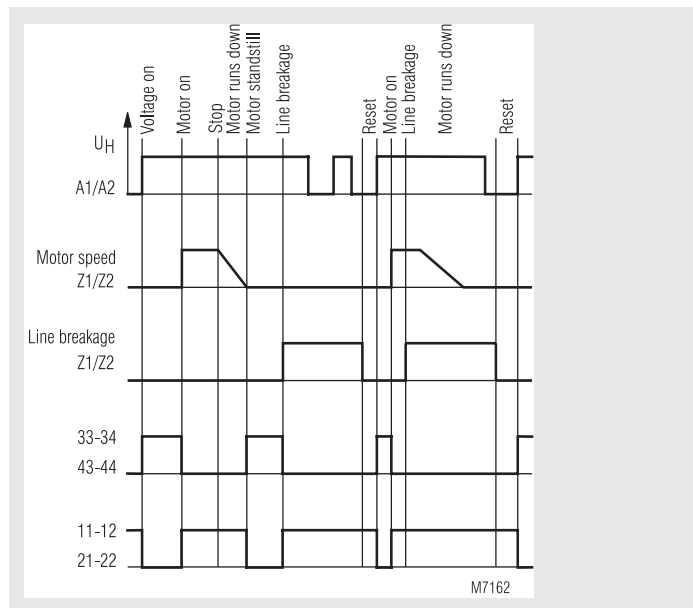
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Product Description

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.

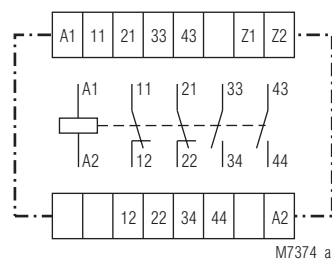
Additional the monitor detects strand breaks between measurement inputs Z1 / Z2.. If a line breakage is detected, the output relay goes into the normal position (as when the motor is running). This state ist saved and can only be cleared by (briefly) switching off the auxiliary voltage.

Function Diagram



M7162

Circuit Diagrams



M7374_a

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 mm² stranded ferruled (isolated), DIN 46228/-1/-2/-3/-4 or 2 x 2.5 mm² stranded ferruled DIN 46228-1/-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 description
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
Contact type:	Relay, forcibly guided
Output rated voltage:	250 V AC
Thermal current I_{th}:	5 A
Switching capacity	IEC/EN 60947-5-1
To AC 15:	
NO contact:	3 A / AC 230 V
NC contact:	2 A / AC 230 V
Electrical life	IEC/EN 60947-5-1
To AC 15 at 2 A, AC 230 V:	10 ⁶ switching cycles
Short circuit strength	
max. fuse rating:	6 A gG / gL IEC/EN 60947-5-1
Mechanical life:	10 x 10 ⁶ switching cycles

General Data

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

Clearance and creepage distances

Rated impulse voltage / pollution degree, Terminals Z1/Z2:	IEC 60664-1
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 61000-4-2
HF irradiation:	10 V/m IEC/EN 61000-4-3
Fast transients:	2 kV IEC/EN 61000-4-4

Surge voltages

Between wires for power supply:	2 kV IEC/EN 61000-4-5
Between wire and ground:	4 kV IEC/EN 61000-4-5
HF-wire guided	10 V IEC/EN 61000-4-6

Interference suppression

Auxiliary voltage AC:	Limit value class B EN 55011
Auxiliary voltage AC/DC:	Limit value class A*) EN 55011

*) 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 60529
Terminals:	IP 20 IEC/EN 60529

Housing:

Thermoplastic with V0 behaviour to UL Subj. 94

Vibration resistance:

Amplitude 0,35 mm
frequency 10 ... 55 Hz IEC/EN 60068-2-6

Climate resistance:

15 / 055 / 04 IEC/EN 60068-1

Terminal designation:

EN 50005

Wire connection:

1 x 4 mm² solid or
1 x 2.5 mm² stranded ferruled (isolated) or
2 x 1.5 mm² stranded ferruled (isolated) DIN 46228-1/-2/-3/-4 or
2 x 2.5 mm² stranded ferruled DIN 46228-1/-2/-3

Line attachment:

Plus-minus terminal screws M 3,5 box terminal with wire protection
DIN rail IEC/EN 60715

Weight:

325 g

Dimensions

Width x height x depth: 45 x 74 x 121 mm

UL-Data

Switching capacity:

NO contacts:	Pilot duty A300 5A 250Vac G.P. 5A 24Vdc
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NC contacts:

5A 250Vac G.P. 5A 24Vdc



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

CCC-Data

Thermal current I_{th} : 5 A

Switching capacity

To AC 15:	2 A / AC 230 V	IEC/EN 60947-5-1
To DC 13:	1 A / DC 24 V	IEC/EN 60947-5-1



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

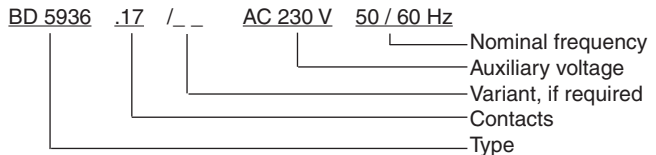
Standard Type

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



Connection Examples

