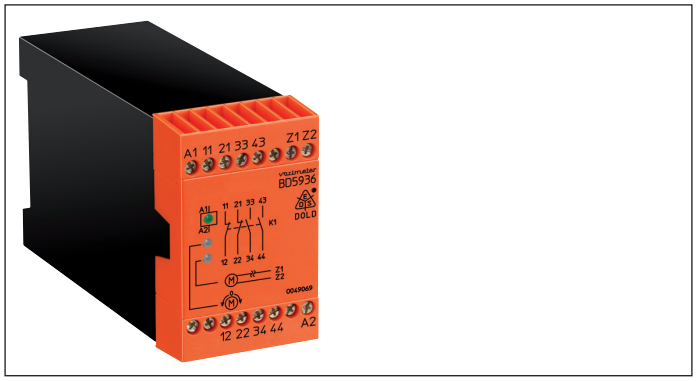
VARIMETER
Standstill Monitor
BD 5936

Translation of the original instructions

DOLD

0221549



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

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.

Approvals and Markings

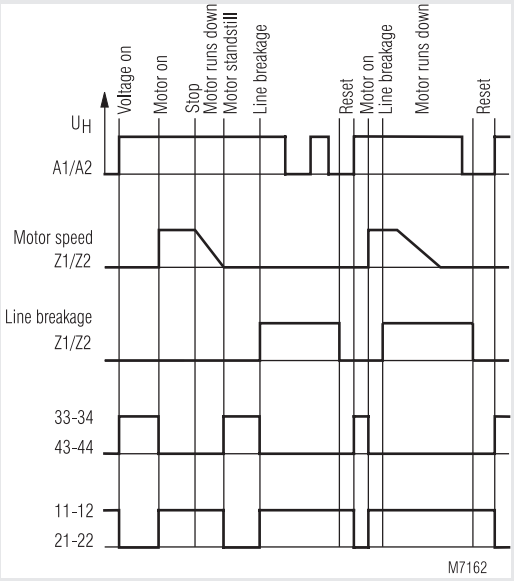
Canada / USA | A025518

* 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 activationg stopping brakes.

Function Diagram



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.

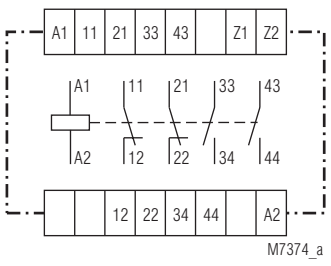
Indicators

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

Circuit Diagrams



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:	10^5 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	
Mounting:	DIN rail	IEC/EN 60715
Weigth:	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
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

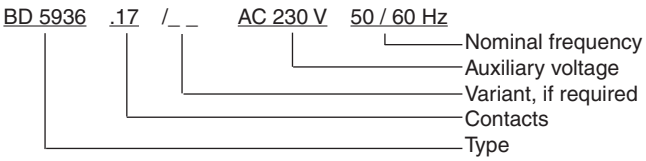
BD 5936.17/001 AC 230 V 50/60 Hz

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