Safety technique

Standstill monitor BD 5936

- For standstill monitoring of 3- and 1-phase asynchronous motors
- Line breakage detection in the measurement circuit
- Positively driven 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 46 228-1/-2/-3/-4 or
  - 2 x 2,5 mm² stranded ferruled DIN 46 228-1/-2/-3
- Width 45 mm

Function diagram

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.

Function

At 2 terminals of the stator winding the BD 5936 measures the voltage of the slowing motor which has been induced by residual magnetism. If the induction voltage approaches 0 this indicates that the device is at a standstill and the output relay is activated.

At the same time the monitor detects strand breaks between measurement inputs Z1/ Z2 by means of a 6-volt alternating current generated by the monitor. 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.

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

Technical data

Input

- Nominal voltage: AC 230 V
  - AC/DC 24 ... 60 V, 110 ... 230 V (other voltages on request)
- Voltage range: 0,8 ... 1,1 Uₙ
- 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

Output

- Contacts BD 5936.17: 2 NO, 2 NC contacts
- Contact type: relay, positively driven
- Output rated voltage: 250 V AC
- Thermal current Iₜₗ: 5 A
- Switching capacity to AC 15: IEC/EN 60 947-5-1
  - NO contact: AC 5 A / 230 V
  - NC contact: AC 2 A / 230 V
- Electrical life to AC 15 at 2 A, AC 230 V: 10⁵ switching cycles
Technical data

Short circuit strength
max. fuse rating: 6 A gL IEC/EN 60 947-5-1
Mechanical life: 10 x 10⁶ switching cycles

General data

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

Clearance and creepage distances
overvoltage category / contamination level,
Terminals Z1/Z2: IEC 60 664-1
at Uₜₚ, AC 230 V: 6 kV / 2 (Overvoltage category III)
at Uₜₚ, AC/DC 24 ... 230 V: 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: 2 kV IEC/EN 61 000-4-5
between wire and ground: 4 kV IEC/EN 61 000-4-5
HF-wire guided: 10 V IEC/EN 61 000-4-6
Interference suppression: Limit value class B EN 55 011

Degree of protection:
Housing: IP 40 IEC/EN 60 529
Terminals: IP 20 IEC/EN 60 529

Vibration resistance:
Amplitude 0,35 mm frequency 10 ... 55 Hz IEC/EN 60 068-2-6

Climate resistance:
15 / 055 / 04 IEC/EN 60 068-1

Terminal designation:
EN 50 005

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 46 228-1/-2/-3/-4 or
2 x 2,5 mm² stranded ferruled
DIN 46 228-1/-2/-3

Line attachment:
Plus-minus terminal screws M 3,5 box terminal with wire protection

Mounting:
DIN rail IEC/EN 60 715

Weight:
325 g

Dimensions

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

Standard type

BD 5936.17/001 AC 230 V 50/60 Hz
Article number: 0049069 stock item
• Output: 2 NO, 2 NC contacts
• Auxiliary voltage Uₜₚ: 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)

Ordering example for Variants

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