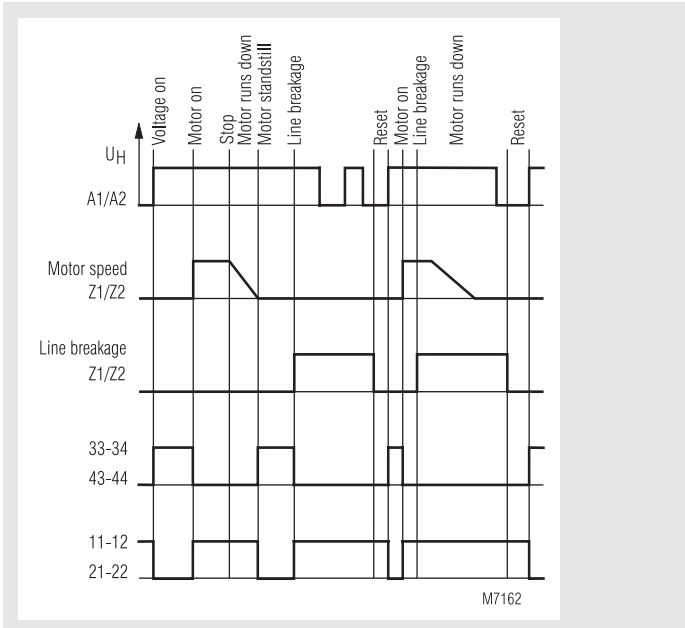


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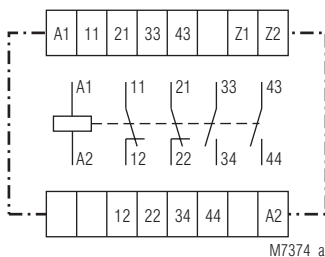


- For standstill monitoring of 3- and 1-phase asynchronous motors
- Line breakage detection in the measurement circuit
- Positively driven output contacts:  
2 NO, 2 NC contacts for 250 V AC
- LED indicators for motor standstill, line breakage, and operating voltage
- Wire connection: also 2 x 1,5 mm<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

### Function diagram



### Circuit diagram



### Approvals and marking



\* 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.

### 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 is 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 U<sub>N</sub>
- 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  
relay, positively driven
- Contact type:** relay, positively driven
- Output rated voltage:** 250 V AC
- Thermal current I<sub>th</sub>:** 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: IEC/EN 60 947-5-1  
10<sup>5</sup> switching cycles

## Technical data

### Short circuit strength

**max. fuse rating:** 6 A gL IEC/EN 60 947-5-1  
**Mechanical life:** 10 x 10<sup>6</sup> 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 U<sub>H</sub>, AC 230 V: 6 kV / 2 (Overvoltage category III)  
 at U<sub>H</sub>, 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

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

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

**Climate resistance:** EN 50 005

### Terminal designation:

**Wire connection:** 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

**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 U<sub>H</sub>: AC 230 V
- with automatic reset for broken wire detection
- Width: 45 mm

## Variants

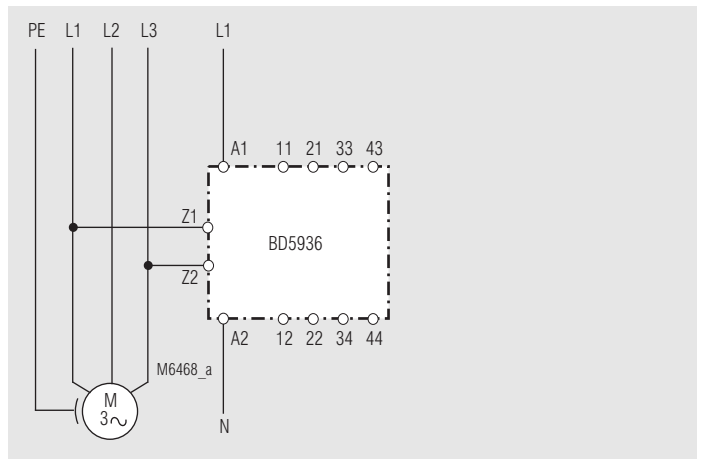
BD 5936.17: without automatic reset for broken wire  
 detection  
 BD 5936.17/61: with UL-approval (Canada/USA)

## Ordering example for Variants

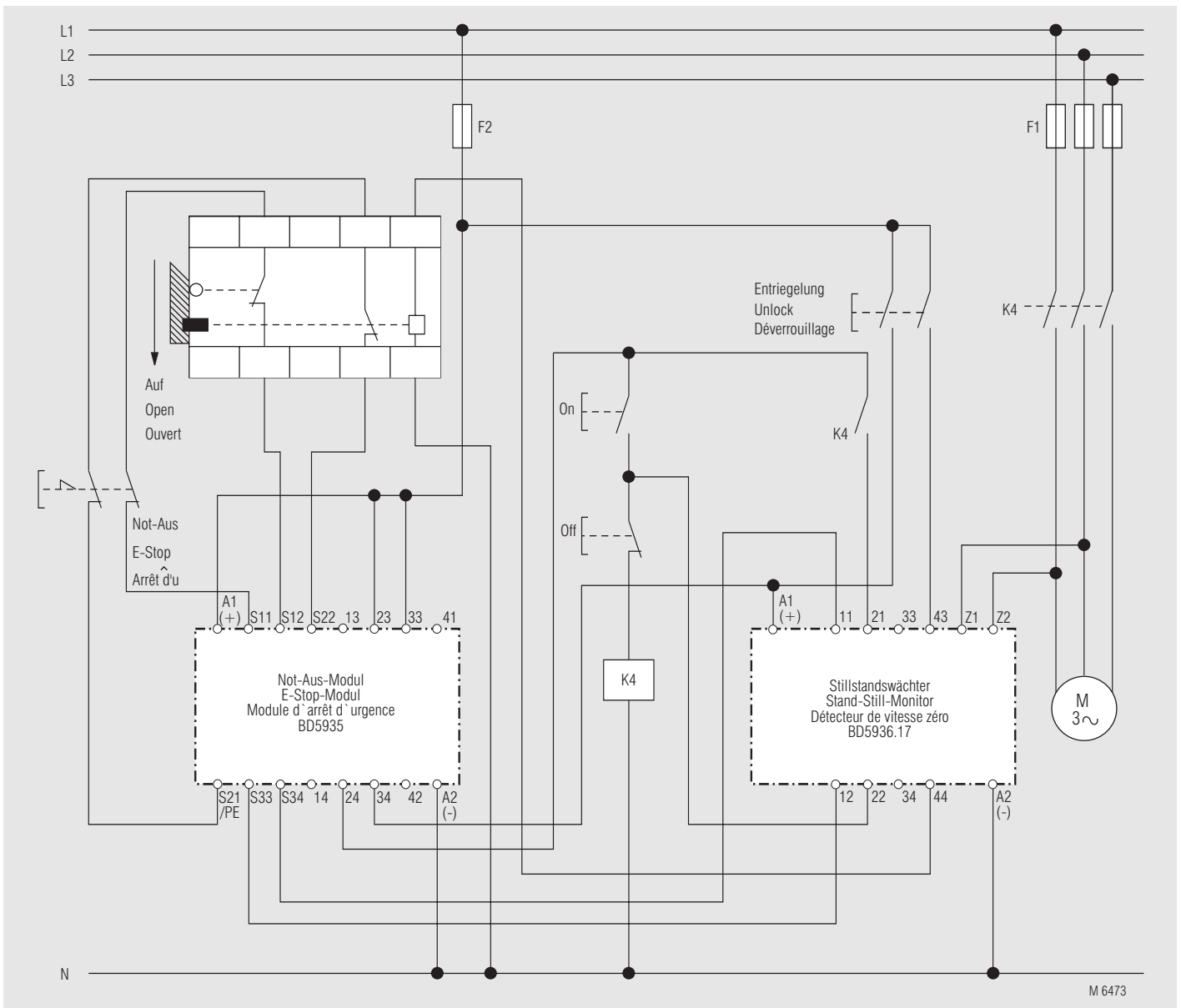
BD 5936 .17 / \_ \_ AC 230 V 50 / 60 Hz

\_\_\_\_\_ Nominal frequency  
 \_\_\_\_\_ Nominal voltage  
 \_\_\_\_\_ Variant, if required  
 \_\_\_\_\_ Contacts  
 \_\_\_\_\_ Type

## Connection example



# Application example



M 6473