Technical Data
Speed Monitoring

Series PDA

Type designation **PDA-T50UR/101** Article number **6512108043**

The PDA-T50UR/101 speed monitor is used for the purpose of detecting rotary motion (rotary speeds) or linear motion (strokes). The complete speed monitoring system consists of the speed transmitter and the speed monitor. The speed transmitter can be either a contactless limit switch or a NAMUR transmitter. Without the need to change over, a PNP or NPN output can be used as the limit switch output.

Function

Based on the period measurement principle, the incoming pulses are compared with the set target speed in the speed monitor. Corresponding to the function setting, the output relay is then switched through on overshooting or undershooting the set target speed. One pulse is required per revolution of the device to be monitored (e.g. cam, switching tab, or similar).
The output relay can be energised directly by the "Test" button for test purposes. This makes it possible to set the target speed while the system is running.

The device must be opened in order to program the monitoring function. There is a slide switch located on the PC-board which can be used to switch the monitoring function from speed overshoot to speed undershoot. The device is set to monitoring speed overshoot at the factory.

Setting the Target Speed

The target speed is set on the front of the device in three ranges of 1,10 and 100. A potentiometer with a scale from 3 to 30 is used for the precision setting. The target speed is the result of the set value multiplied by the relevant position of the range switch.

Time Delay

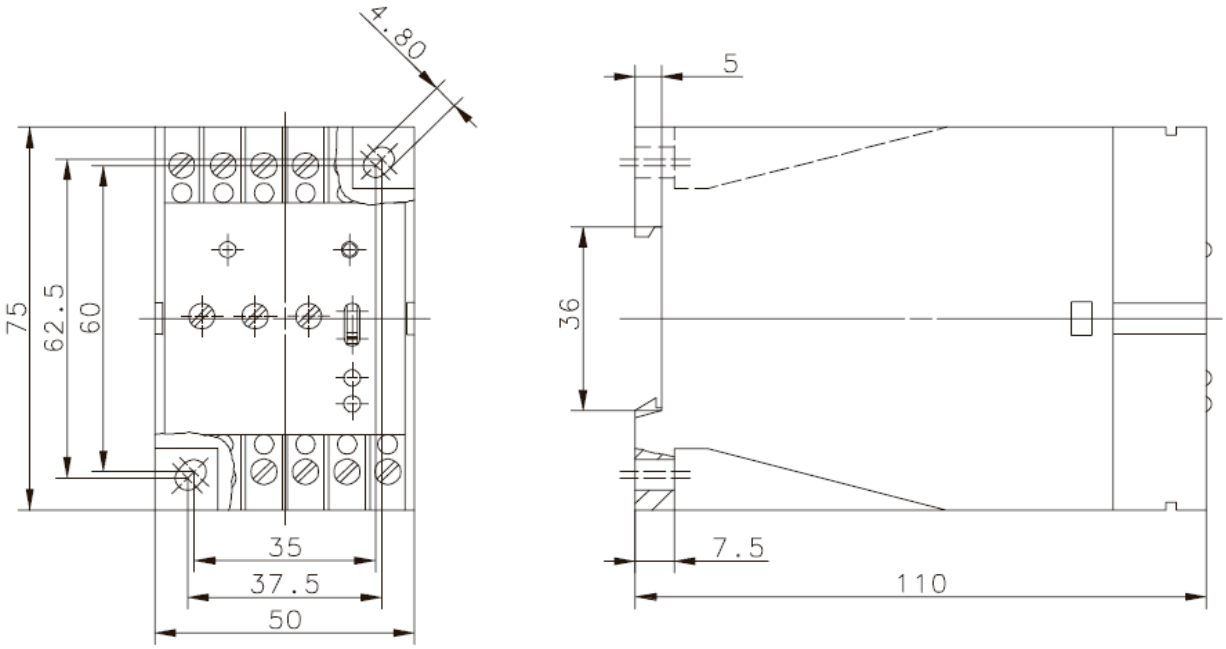
The time delay prevents an error message being triggered during the drive start-up phase. Corresponding to the programming, the output relay is either energised or de-energised during the set start-up time. Speed monitoring is activated after the time delay has elapsed.
The time delay begins when the "Start Time Delay" terminals are short-circuited. The start-up time can be set between 1 and 30 s on the front of the device.
The "Start Time Delay" terminals must remain short-circuited during operation. Speed monitoring is immediately inactive after opening the terminals.

Hysteresis

The hysteresis can be set at the front of the device. The scale ranges from 1 to 15 and indicates the hysteresis as a percentage of the set target speed.

Mechanical Data

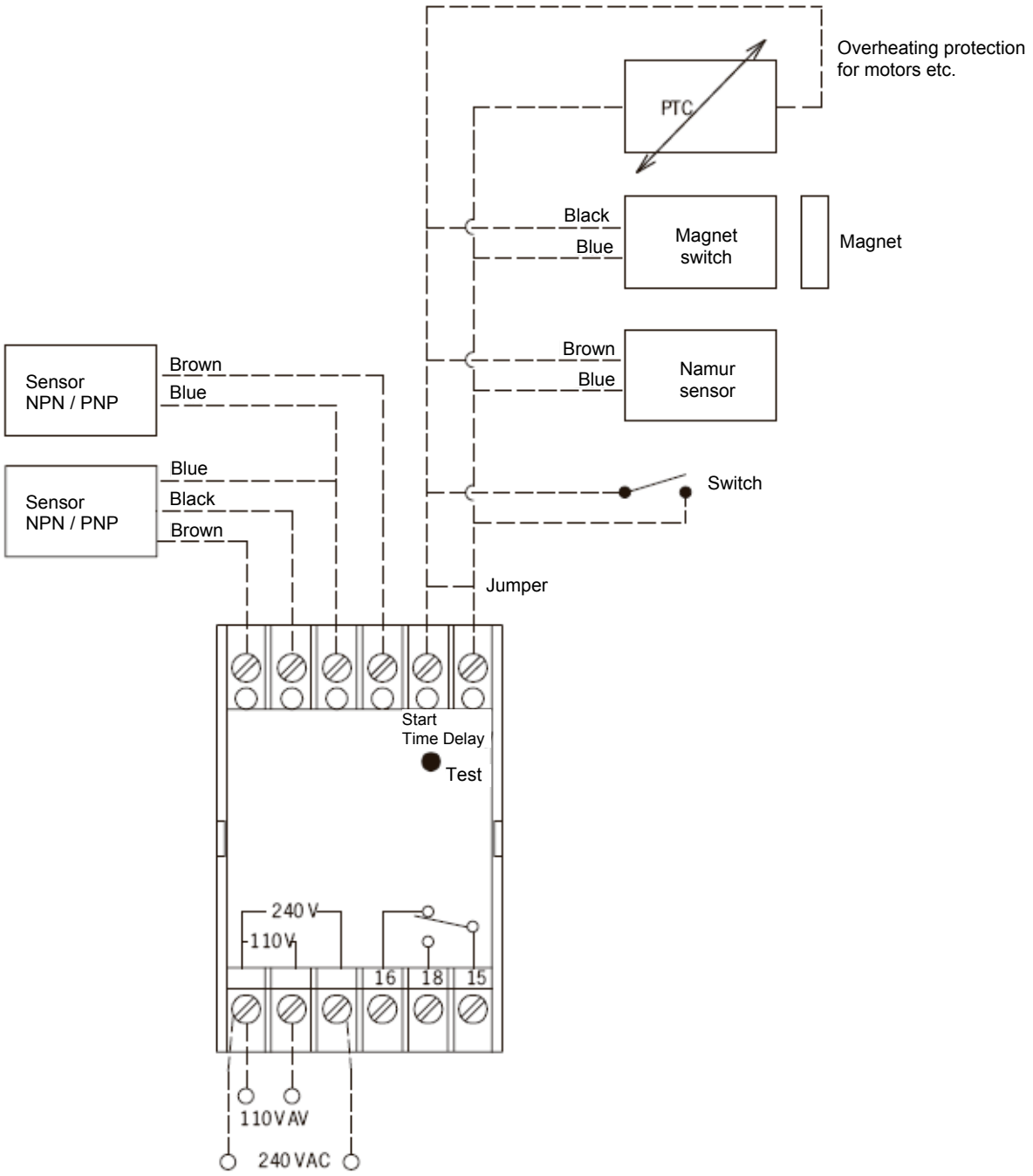
Exterior dimensions LxWxH: 75 x 50 x 110 mm
Connection cross section: ≤ 2.5 mm²
Enclosure fastening n mounting rail as per DIN 46277
or mounting dimensions 35 x 60 mm for M4 screws.



Ambient Conditions

Lower limit temperature:	Code letter H: -25 °C
Upper limit temperature:	Code letter U: +60 °C
Type of protection:	IP20

Connection Assignments



Electrical Data

Operating Voltage

Optionally	AC 110 V	+10 %	-15 %	50/60 Hz
or	AC 240 V	+10 %	-15 %	50/60 Hz

- Power intake approx. 3 VA

Inputs

- Supply voltage for contactless limit switch: approx. 13 to 18 V
  Internal resistance: Approx. 2 kΩ
  Residual ripple, max. 10 %
- Voltage supply for NAMUR input: 8 V
  Internal resistance: 1 kΩ
  Switching point as per DIN 19234 between 1.2 and 2.1 mA
- Supply voltage for Start Time Delay: 8 V
  Internal resistance: 1 kΩ
  Switching point as per DIN 19234 between 1.2 and 2.1 mA
- Min. pulse duration: 1 ms
- Min. pulse pause: 1 ms

Indicators

- Green LED for pulse input check
- Yellow LED for target speed reached
- Red LED for relay energised

Electrical Requirements of Limit Switch

- Voltage drop: ≤ 2.5 V
- Switching current: ≥ 50 mA
- Operating voltage range: 10 to 30 V

Output

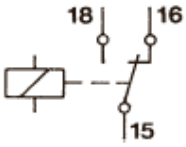
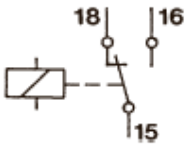
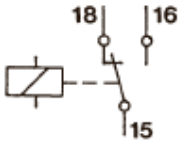
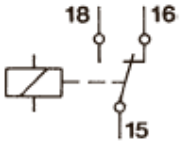
Floating relay contacts with one changeover contact

- Switching current: ≤ 10 A
- Switching voltage: ≤ AC 230 V
- Switching power: ≤ 2000 VA

Function Table

Changeover of monitoring function

- Speed overshoot
- Speed undershoot

Programming	Output relay setting $N_{actual} < N_{target}$	$N_{actual} < N_{target}$
		
		

Output relay setting during time delay