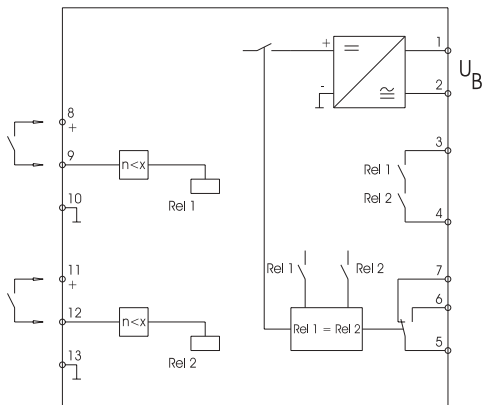




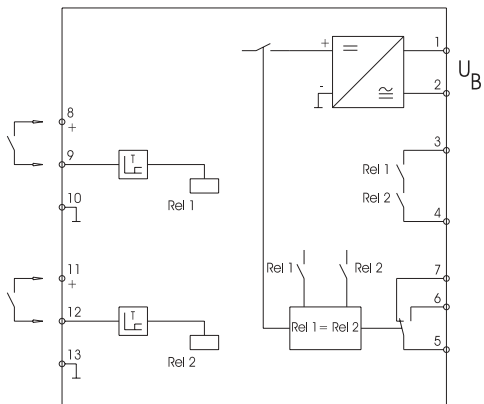
462 041 01 E
462 041 01 H
462 046 01 E
462 046 01 H

- (D)** Betriebsanleitung
Stillstandsmelder / Zeitrelais
- (GB)** Operating Instructions
Zero speed monitor / time delay relay
- (F)** Notice d'utilisation
Unité de contrôle d'arrêt/ Relais temporisé
- (I)** Istruzioni d'impiego
controllo albero fermo / relè a tempo

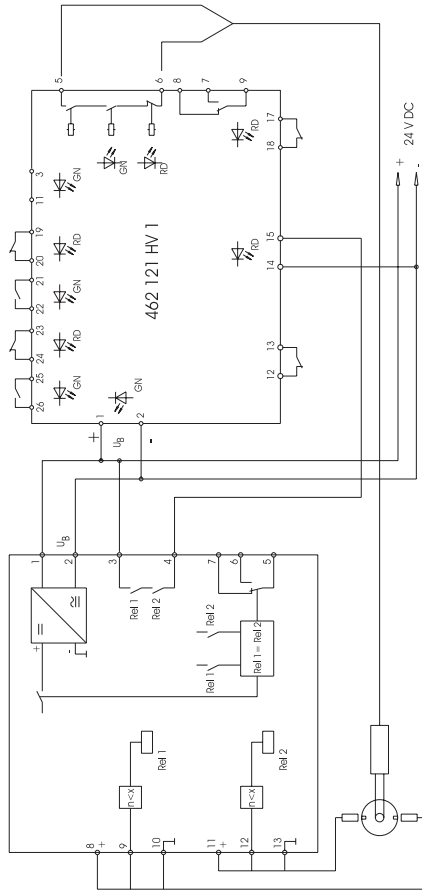
462 041 01 E, 462 041 01 H



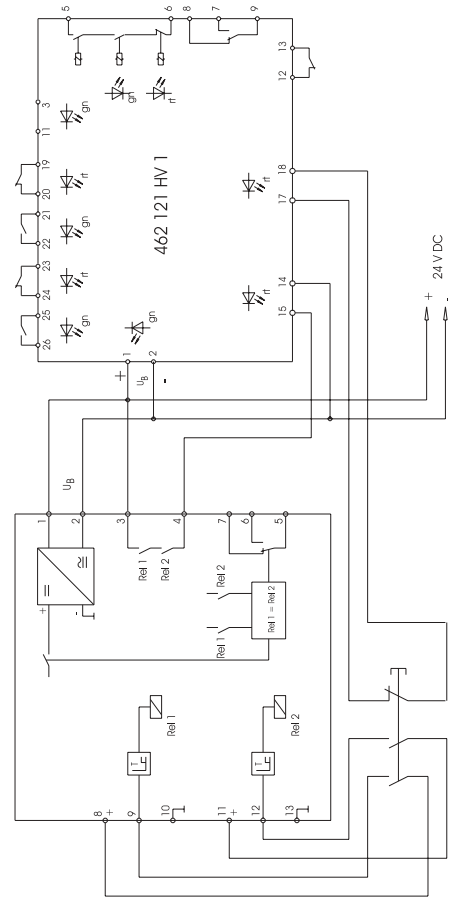
462 046 01 E, 462 046 01 H



1



2



1 Technical Specification

1.1 Legend

1. Connection Diagram 462 041 01 E, 462 041 01 H
2. Connection Diagram 462 046 01 E, 462 046 01 H

1.2 Terminal assignment

General

<i>Terminal</i>	<i>Assignment</i>
1, 2	Supply voltage
3, 4	Safety output
5, 6, 7	Fault indication output

Models

Type 462 041 01 E, 462 041 01 H (Zero speed monitor)

<i>Terminal</i>	<i>Assignment</i>
8, 9, 10	Sensor 1, input 1
11, 12, 13	Sensor 2, input 2

Type 462 041 01 E, 462 041 01 H (time delay relay)

<i>Terminal</i>	<i>Assignment</i>
8, 9, 10	Input 1
11, 12, 13	Input 2

1.3 Model Numbering System

The following example and table demonstrates the numbering system used for the zero speed monitor and the time delay relay.

- Example:
- 462 046 01 E
- 4ab cde fg h

Notation	Reference		Meaning
4ab	Housing type and width	462	Housing width 47 mm
		463	Housing width 25 mm
cd	Device group	04	Zero speed monitor/time delay relay
e	Device type	1	Zero speed monitor
		6	Time delay relay
fg	Others	01	not significant
h	Others	E	Category 3 acc. EN 954-1
		H	Category 3 acc. EN 954-1

1.4 Electrical and mechanical specifications

In the circuit diagrams shown on the foldout page the zero speed monitor and the time delay relay are shown without power applied.

General

Supply voltage	24 V DC \pm 10% FELF (one side must be earthed)
Safety output	Normally Open contact, volt free
Output for fault signalling	Change-over contact, volt free
max. switching voltage Safety output	250 V AC; 30 V DC
max. switching voltage Fault signalling output	60 V AC; 30 V DC
max. switching current Fault signalling output	1 A
max. breaking capacity Fault signalling output	60 VA or 30 W
Fuse Supply voltage	1 A
Fault output fuse	1 A
Operating temperature	0 °C ... +55 °C
Storage and transport temperature	-25 °C ... +85 °C
Vibration and shock resistance	Oscillations: 10 ... 55 Hz, 1 mm Shock: 30 g / 10 ms Permanent shock: 10 g / 16 ms
Protection class	IP 20

Models

Types 462 041 01 E, 462 041 01 H (zero speed monitor)

Switch off frequency	2.5 min ⁻¹
max. input frequency	5 kHz

max. switching current: safety output

<i>Type</i>	<i>max. switching current</i>
462 041 01 E 462 046 01 E	5 A / 3 A
462 041 01 H 462 046 01 H	8 A / 5 A

max. switching capacity: safety output

<i>Type</i>	<i>max. breaking capacity</i>
462 041 01 E 462 046 01 E	1250 VA bzw. 150 W
462 041 01 H 462 046 01 H	1800 VA bzw. 190 W

Current input

<i>Type</i>	<i>Current input</i>
462 041 01 E 462 046 01 E	100 mA
462 041 01 H 462 046 01 H	150 mA

Safety output fuses

<i>Type</i>	<i>Fuse</i>
462 041 01 E 462 046 01 E	3 A
462 041 01 H 462 046 01 H	5 A

LED display
General

<i>LED at terminal</i>	<i>Color</i>	<i>Meaning</i>
2	green	Supply voltage ON
3	green	Safety output closed
4	red	Safety output open
6	red	Fault detected channel 1
7	red	Fault detected channel 2

Models

Type 462 041 01 E, 462 041 01 H (zero speed monitor)

<i>LED at terminal</i>	<i>Color</i>	<i>Meaning</i>
9	green	Pulse Input sensor 1
12	green	Pulse Input sensor 2

Type 462 046 01 E, 462 046 01 H (time delay relay)

<i>LED at terminal</i>	<i>Color</i>	<i>Meaning</i>
9	green	Input 1 connected
12	green	Input 2 connected

2 Intended use

Type 462 041 01 E, 462 041 01 H (zero speed monitor)

The zero speed monitor is used to determine when a machine has come to a complete stop.

Type 462 046 01 E, 462 046 01 H (time delay relay)

The time delay relay gives a delayed output after switch on.

2.1 Standards and Directives

The zero speed monitor and the time delay relay comply with the following European directives:

- ➔ 73/23/EEC (low-voltage Directive)
- ➔ 89/336/EEC (electromagnetic-compatibility Directive)
- ➔ 89/392/EEC (machinery Directive)

The zero speed monitor and the time relay were subjected to EU prototype testing at TÜV/IQSE in Munich, Germany.

The zero speed monitor and the time delay relay comply with the following standards.

General

Standard	Subject
EN 292	Safety of machines, basic concepts
EN 60 204	Electrical equipment of industrial machinery
VDE 0110	Electrical safety
IEC 1010	Electrical safety
IEC 68/part 2	Environmental Testing
EN 50 082	EMC emission & immunity in industrial environments
EN 55 011	Radio interference suppression of industrial electrical equipment
IEC 801	Electromagnetic tolerance

Models

Types 462 041 01 E, 462 046 01 E

<i>Standard</i>	<i>Subject</i>
EN 951-1, category 3	Safety of machines, basic concepts

Types 462 041 01 H, 462 046 01 H

<i>Standard</i>	<i>Subject</i>
EN 951-1, category 4	Safety of machines, basic concepts

2.2 Safety/hazards

General

- Ensure that the zero speed monitor or the time delay relay are only installed and commissioned by qualified and authorised personnel.
- Ensure that correct fuses are used (see Technical Specification).
- Only operate zero speed monitor or time delay relay if completely undamaged.
- Ensure that the zero speed monitor or the time delay relay are only used for protection against safety hazards.
- Ensure that all relevant safety instructions and regulations for the machine concerned are always followed.
- Ensure that all applicable European directives and national statutory requirements/directives are followed.

3 Function

Type 462 041 01 E, 462 041 01 H (zero speed monitor)

The zero speed monitor is used to determine when a machine has come to a complete stop.

The zero speed monitor will close the safety output, when:

- no pulses are received from sensors 1 & 2 for a period of 7 seconds or more, because the machine has stopped.

The zero speed monitor opens the safety output, when:

- pulses are received from sensors 1 or 2 because the machine has not stopped.

The zero speed monitor gives a fault output when:

- pulses are received from only one sensor for a period of 3 seconds or more.

Type 462 046 01 E, 462 046 01 H (time delay relay)

The delay period starts when inputs 1 and 2 are activated. The delay period is factory pre-set.

The time delay relay closes the safety output, when:

- the delay time has expired.

The time delay relay opens the safety output, when:

- inputs 1 and 2 are switched off.

The time delay relay gives a fault output, when:

- inputs 1 & 2 are not in the same switched state for a period of three seconds or more.

4 Mounting



Danger

Danger of fatal electric shock

- Ensure that the zero speed monitor or the time delay relay is only installed and commissioned by qualified and authorised personnel.

General

- Install the zero speed monitor or time delay relay onto the control cabinet by snapping it onto a DIN rail (DIN 50 022).

The zero speed monitor or time delay relay has been fixed.

- Make all the necessary connections to the zero speed monitor or time delay relay (see Technical Specification).
- Ensure that the correct fuses are used (see Technical Specification).

Models

Types 462 041 01 E, 462 041 01 H (zero speed Monitor)

- Install sensor 1 and sensor 2 in such a way that they switch synchronously.

Types 462 046 01 E, 462 046 01 H (time delay relay)

- Ensure that input 1 and input 2 are switched synchronously.

5 Commissioning



Danger of fatal electric shock

- Ensure that the zero speed monitor and the time delay relay are only installed and commissioned by qualified and authorised personnel.

- Apply the supply voltage.

The supply voltage LED will illuminate. All other LEDs will illuminate depending on the position of the sensor inputs or of the timer inputs.

The zero speed monitor or the time delay relay are now operational.

5.1 Returning to readiness for service

If, after a fault, all the red LEDs do not light up:

- Replace zero speed monitor or time delay relay.

Types 462 041 01 E, 462 041 01 H (zero speed monitor)

If pulses are received from only one sensor for a period of more than 3 seconds:

- Switch off supply voltage.

The red LEDs will not be illuminated.

- Check sensors and machine.
- Remedy faults.
- Reconnect supply voltage.

The zero speed monitor is now operational again.

Types 046 01 E, 462 046 01 H (time delay relay)

If inputs 1 and 2 have a different switching condition for more than 3 seconds:

- Switch off supply voltage.

The red LEDs will not be illuminated.

- Check inputs and machine.
- Remedy fault.
- Reconnect supply voltage

The time delay relay is now operational again.

5.2 Fault indication cannot be cleared.

- Check connections at input and output terminals:
 - Supply voltage,
 - connected sensors.
- Connections at input and output terminals OK:
Replace zero speed monitor or time delay relay.

6 Maintenance**6.1 Measures**

The zero speed monitor and time delay relay do not require maintenance.

6.2 Disposal

- Dispose of packaging and used parts according to the regulations of the country in which the device is installed.

Datum: 23.09.2004

elobau 

elobau
Elektrobauelemente GmbH & Co. KG

Postfach 1265
88306 Isny/Allgäu
Germany

Werk:
Zeppelinstr. 44
88299 Leutkirch
Germany
Tel.: +49 75 61/970 - 0
Fax: +49 75 61/970 - 100
E-Mail: info@elobau.de
Web: www.elobau.de

 0123