

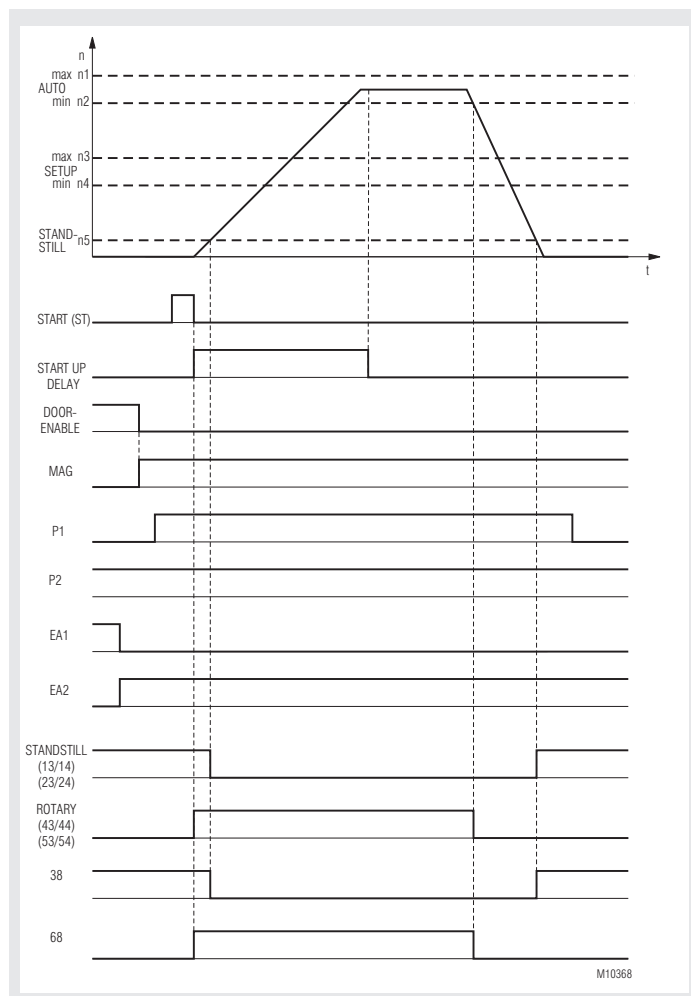
SAFEMASTER S Speed Monitor UH 5947



Product Description

The speed monitor UH 5947 provides safe monitoring of motors and rotating equipment. It is used in machines and plants where machine movements or moving parts can be a danger to men and machine. Using the front side display the parameters can be easily and comfortably adapted to the individual application or changed when necessary.

Function Diagram



Your Advantages

- Three in one
 - Safe speed monitoring in automatic and set up operation
 - Safe standstill monitoring
 - Safe integrated gate monitoring
- For safety applications up to PL e / Cat 4 and SIL 3
- Space and costsaving, no external safe gate monitoring required
- Simple and time saving setup without PC
- Comfortable, menu guided configuration via frontside display
- Reducing interruption time in production by extensive diagnostic functions
- Easy to integrate in existing drive applications
- Suitable for all common motor feedback systems and proximity sensors
- Copy parameter settings in other units by pressing only a push button
- Higher safety by 2-channel mode selector, external connection
- With adjustable ratio between 2 sensors e.g. to detect a broken shaft
- Possible languages: English, german, french, italian, spanish

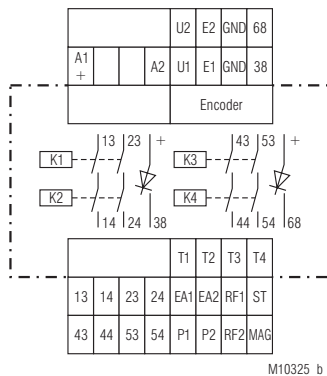
Features

- **According to**
 - **PL e and category 4 to EN ISO 13849-1**
 - **SIL 3 to EN 61508**
- **Can be used in safety applications as follows:**
 - **Up to maximum SIL 3 according to EN IEC 62061**
- Suitable for STO, SOS, SLS, SSM, SSR, SDL acc. to EN 61800-5-2
- Device setting on menu-driven display or via RJ45 (FCC Western-Modular 8P8C) with connection cable (copy function)
- Change tracking
- Adjustable operation mode
 - Automatic mode: Monitoring of automatic rotational speed window and standstill speed.
 - Setup mode: Monitoring of setup rotational speed window. Standstill is permanently enabled.
- Single or 2-channel safety gate monitoring
- Integrated user friendly display for parameters and operation status
 - For set point and actual value of U/min or m/min
 - Set point display also as frequency value
 - With numerous diagnostic features
- Adjustable start up delay (0 ... 999 s)
- Adjustable time delay for standstill detection (13/14, 23/24) (0 ... 999 s)
- Adjustable monitoring time for feedback circuit RF1 (0,5 ... 999 s)
- Monitoring of an release magnet
- Monitoring of feedback circuits
- Activation of the output path 43/44, 53/54 with on/off pushbutton with short circuit detection or automatic making function
- Adjustable PNP- or NPN-sensors
- Connection of different encodern possible (sin/cos, TTL, HTL)
- 2-channel function
- Forcibly guided contacts
- LED-indicators and 2 semiconductor monitoring output
- With pluggable terminal blocks for easy exchange of devices
 - With screw terminals
 - Or with cage clamp terminals
- Width 45 mm

Approvals and Markings



Circuit Diagram



UH 5947.04

Indicator

DEVICE:	Green	→ Run
	Green-flashing	→ Parameterization mode
	Red-flashing	→ Parameterization error
	Red	→ Device fault
K1/K2:	Green	→ Output contact 13/14, 23/24 closed
	Green-flashing	→ Stop monitoring feedback loop 2 failed
K3/K4:	Green	→ Output contact 43/44, 53/54 closed
	Green-flashing	→ Stop monitoring feedback loop 1 failed
SF:	OFF	→ No failure
	Red	→ (external) failure
DISPLAY:		→ Status indication
		→ Alarms / diagnostics
		→ Parameterization

Connection Terminals

Terminal designation	Signal description
A1 (+)	+ / L
A2	- / N
U1, U2	+ supply for proximity sensors or NAMUR-sensors
GND	- supply for proximity sensors
E1, E2	Input for pulse signal from proximity sensors or NAMUR-sensors
13, 14, 23, 24, 43, 44, 53, 54	Forcibly guided NO contacts for release circuit
38, 68	Semiconductor-monitoring output
T1, T2, T3, T4	Control output
ST, MAG, RF1, RF2, P1, P2, EA1, EA2	Control input

Application

This device is designed for machinery and installations where hazards to people and property may be caused by the movement of machines or parts. The device permanently monitors for standstill (output circuit 13/14, 23/24) and rotational speed (output circuit 43/44, 53/54). For the rotational speed monitoring, it is possible to choose between automatic and setup mode. If properly connected, the UH5947 can be used to implement the safety functions STO (safe torque off), SOS (safe operation stop), SLS (safely limited speed), SSM (safe speed monitoring), SSR (safe speed range), as well as SDL (safe door locking) as per standard EN 61800-5-2.

Functions

The device can be configured from the display and keys on the front plate or via RJ45 using a suited connection cable (see accessories) by means of the copy function.

Following measuring sensors can be used to sense the rotational speed:

- Two NPN or PNP proximity sensors (special version with NAMUR sensors) connected to the inputs E1 and E2. The proximity sensors (NAMUR sensors) are supplied with 24VDC from the speed relay to the terminal U1 and U2 (special version NAMUR 8.2V DC).
- Encoders (sin/cos, TTL, HTL) connected to the RJ45 interface via cable adapter (optionally available). The powersupply for the encoder is not provided by the speed monitor. Feedback influences should not occur.
- Combination from encoder and one proximity or NAMUR sensor for special version.

Device and Function Description

Overview on terminals and their function

Supply voltage A1, A2

Terminal for power supply to the device (see technical data).

Measuring inputs U1, U2, GND, E1, E2, and RJ45

The terminals E1 and E2 are provided for NPN or PNP proximity sensors (special version with NAMUR sensors). The switches are supplied with 24VDC (special version NAMUR U1, U2 = 8.2VDC) via the terminals U1, U2 and GND. The type of sensor (NPN or PNP) is to be selected in the menu.

The RJ45 interface is suited for the connection of encoders with sin/cos, TTL and HTL signals.

Output circuits (contacts) 13/14, 23/24, 43/44, 53/54

The device has two output circuits that are equipped with each two safety relays (standstill K1, K2; speed range (window) K3, K4) with forcibly guided contacts connected in series.

- Automatic mode: Monitoring of automatic rotational speed window and standstill speed.
- Setup mode: Monitoring of setup rotational speed window. Standstill is permanently enabled.

Signalling outputs 38 und 68

The non safety semiconductor signalling outputs 38 and 68 are designed for connection to a PLC, for example. They work as follows:

The terminal 38 outputs the internal supply potential (U_{Rel} approx. 24 V) when the rotational speed drops under the set standstill speed ($n < n_{Still}$), i.e. a standstill is detected.

The terminal 68 outputs the internal supply potential (U_{Rel} approx. 24 V) when the rotational speed is within the set speed limits of the setup or automatic mode ($n_{min} < n < n_{max}$).

If the release monitoring time is exceeded for RF1, a flash code signal is shown on monitoring output 68 with an ON/OFF ratio of 50/50.

Variant /101: The semiconductor outputs are not switching synchronous to the relay outputs. The semiconductor outputs give out the incoming signal

Device and Function Description	Device and Function Description
of E1 with a ratio 1:2 if sensor selection is E1+E2. If E1+E2 is not chosen in sensor selection, the semiconductor outputs have no function. Variant /200: the transistor outputs are not connected to the relay status. They are continuously on when the unit is on operation and are switched off as soon as a failure is detected. Test signals T1, T2, T3, T4	When the connection is only single-channel or two separate single-channel position switches are connected for a lower category the detection of simultaneity has to be disabled in the menu. When using a single-channel position switch the terminals T2 and P2 have to be bridged. If none of the position switches are used, the terminals T1 and P1 and the terminals T2 and P2 have to be bridged. In setup mode the signal inputs P1 and P2 are not monitored.
To detect errors in the input circuitry or while the safety-related inputs ST, RF1, RF2, EA1, EA2, P1, P2, and MAG are processed, a dynamic output signal is routed via the switching elements and via the start and feedback circuits. To this end, the output signals on the individual outputs T1, T2, T3 and T4 are different allowing to detect cross faults between the output signals. Signal input ST (start circuit)	Signal inputs EA1 and EA2 (operating mode selection)
The start signal is applied to this input. ST is supplied from the test signal T4. To start the movement connected to 23/24 and the monitoring the ON/OFF pushbutton has to be pressed for manual starting. This pushbutton is monitored for cross fault and short circuit by requiring a falling edge for starting. Therefore, it may not be pressed for more than 3 sec. When a cross fault or short circuit is detected the device changes to the safe condition and a diagnostic alarm is displayed. Once the fault is eliminated, a reset (see fault handling) or a restart by switching off and back on the supply voltage is required. For automatic starting, the test signal T4 must be present on ST via a jumper to start the device.	This speed monitor is suited for monitoring 2 different operating modes (setup and automatic mode). The speed limits for each operating mode are set in the menu using the keys. A safety-related two-channel antivalent switch connected to the terminals EA1 and EA2 is used to select the operating mode and thus the speed to be monitored. Monitoring of the setup speed is selected when EA1 is connected to T1 via the antivalent selector switch and EA2 is disconnected from T2 by the antivalent switch. To monitor the automatic speed EA1 must be disconnected from T1 by the antivalent switch and EA2 must be connected to T2 via the antivalent selector switch. Both channels of the switch are monitored for simultaneity ($t_{diff} < 1.0$ s). When the simultaneity is not fulfilled or a cross fault between EA1 and EA2 is present the device changes to a safe failure condition. Once the fault is eliminated, a reset (see fault handling) or a restart by switching off and back on the supply voltage is required. If no selection switch is connected to EA1 and EA2, wire links have to be installed according to the required function. (set up mode bridge EA1 to T1; automatic mode bridge EA2 to T2).
Signal input MAG (interlocking of the safety gate) MAG is supplied from the test signal T4. To start the dangerous movement (output 43/44, 53/54) the safety gate must be locked. The locking magnet has a contact that is read from the device via the MAG terminal. When this contact is not closed the device cannot be started or immediately changes to a safe condition (output contact 43/44, 53/54 drops out). However, when the contact is closed again the device can be started again. It is not needed to acknowledge the alarm. At automatic mode the contact is permanently monitored. When it is not used the terminals T4 and MAG must be bridged. In setup mode the signal input MAG is not monitored.	Times Start-up delay time t_a
Signal input RF1 (feedback circuit for setup or automatic mode) RF1 is supplied from the test signal T3. The terminal RF1 is used to read the NC contacts of the external contactors that are connected to the terminal 44, 54. Switching through of the output contact 43/44, 53/54 is only possible when the feedback contacts are closed. When the output contacts 43/44, 53/54 are switched off, the feedback contacts must be closed within the monitoring time t_f. If not a failure message is displayed (see section time functions). If no contact extension or reinforcement is used, the terminals T3 and RF1 must be bridged.	The start-up delay time is used to override the monitoring during the motor's start-up time until it has reached a certain rotational speed, for example. When the parameterized min. setup or automatic speed is not reached within the parameterized start-up delay time t_a the device immediately switches to a safe condition. The contacts 43/44, 53/54 are opened and the signalling output 68 is de-energized. The start-up delay time is counted down whenever the device is restarted, a change from setup to automatic mode occurs in automatic start mode, or the ON/OFF pushbutton is pressed in manual start mode. However, the precondition before starting the start-up delay time is always that all safety requirements (position switch, magnet switch, feedback circuit) except of the speed are fulfilled. During this start-up delay time, the output contact 43/44, 53/54 is permanently switched through provided the safety requirements such as position and magnet switches remain fulfilled.
Signal input RF2 (feedback circuit for standstill) RF2 is supplied from the test signal T3. The terminal RF2 is used to read the NC contacts of the external contactors that are connected to the terminal 14, 24. Switching through of the output contact 13/14, 23/24 is only possible when the feedback contacts are closed. When the output contact 13/14, 23/24 is opened the feedback contacts need to be closed again after 1 second, otherwise a diagnostic alarm appears. Once the fault is eliminated, a reset (see fault handling) or a restart by switching off and back on the supply voltage is required. If no contact extension or reinforcement is used, the terminals T3 and RF2 must be bridged.	Release delay time t_r The release delay time is the time that is counted down until the output contacts 13/14, 23/24 and the signalling contact 15 are switched through after a detected standstill.
Signal inputs P1 and P2 (position switches for safety gate) P1 is supplied from the test signal T1 and P2 from the test signal T2. These terminals are used to connect the position switches for the safety gate with tumbler mechanism. To achieve the highest possible categories (Performance Level e as per DIN EN ISO 13849-1 and SIL3 as per IEC EN 61508) the position switches are connected via two channels. The position switches are monitored for simultaneity. When the position switches are opened the contacts P1 and P2 must be opened within $t < 1.0$ sec. A diagnostic alarm appears on the display when the simultaneity is not met. Once the fault is eliminated, a reset (see fault handling) or a restart by switching off and back on the supply voltage is required. To start the output contact 43/44, 53/54 both position switches must be closed at automatic mode.	Release monitoring time t_r The release monitoring time is used to check the contactors connected to the output contacts 43/44, 53/54. When the feedback to RF1 is not present within the parameterized release monitoring time t_r after release of the output 43/44, 53/54 a 50/50 flashing code is immediately issued from the signalling output 68. Additionally, an alarm is displayed. Once the fault is eliminated, a reset (see fault handling) or a restart by switching off and back on the supply voltage is required. Discrepancy time During the discrepancy time, different frequencies are tolerated at the two measuring inputs (E1, E2, Encoder). If the discrepancy between the frequencies lasts longer than the set discrepancy time, the device goes into safe error state.

Device and Function Description

Response time up to the cut-out process after expiration of the set start-up delay time

The max. response time up to the detection of an underfrequency condition depends on the threshold to be checked. The max. response time up to the detection of an overfrequency condition depends on the present measuring signal. The lower the set threshold the more time needs the device to detect the failure. To achieve a quicker response time encoders or gearwheels may be used which deliver more pulses per revolution (e.g. encoders with line number 32). This reduces the time $1/f_{\text{Threshold}}$ by the factor that equals to the encoder's number of lines or number of teeth.

General rule:

$$t_{\text{response_max}} = \frac{1}{f} + t_{\text{Reaktion}}$$

Example: Underspeed to be monitored in setup mode 120 rpm = 2 Hz

With prox. sens.:
(1 pulse/rev.)

$$t_{\text{response_max}} = \frac{1}{2 \text{ Hz}} + 150 \text{ ms} = 650 \text{ ms}$$

With encoder with
number of lines = 32:

$$t_{\text{response_max}} = \frac{1}{2 \text{ Hz} \times 32} + 150 \text{ ms} = 166 \text{ ms}$$

f = Set frequency threshold or frequency of the present measuring signal (e.g. underfrequency in setup mode)

t_{response} = Internal response time after detection of cut-out frequency (max. 150 ms)

Display

In normal operating mode, all settings can be checked at any time by pressing the UP or DOWN keys.

Additionally, the current speed from proximity sensor 1 or from the encoder is displayed. However, this speed does not correspond to the device's accuracy and is only designed for diagnostic purposes.

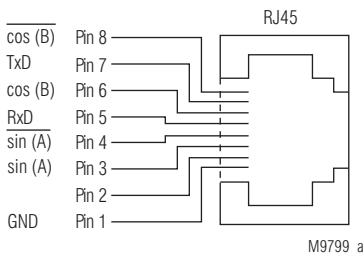
In the case of wiring errors and system failures corresponding diagnostic messages are displayed on the display unless they are deliberately disabled in the parameterization.

Parameterization

Parameterization and pin assignment of the RJ45 interface

When the UH 5947 is appropriately configured, the RJ45 interface is used to connect an encoder to the device. All 4 signal paths (A, $\bar{A}$, B, $\bar{B}$) and GND must be connected with the Encoder.

Moreover, this interface can be used to parameterize another device using an appropriate transfer cable OA 5947/100 (see accessories) and the copy function. This is useful when the speed monitor is to be used in a serial application or has to be replaced in case of failure.



Parameterization using the display

See attached form page 57

Device and Function Description

Block Changes

To block changes in the menu point "Parameterization", the menu point "Changes" with the sub point "lock" is available. If this point is activated changing of the parameters is inhibited.

Change tracking

To recognise not permitted changes in the menu point "Parameterization" the menu point "Changes" with the sub point "track" is available. This setting allows to activate a counter once, which is then incremented with each confirmed change of the settings. After activation of this function the user cannot reset the counter or disable this function again.

Device and Function Description

The parameterization menü has follow structure: Illustration shows the factory setting ²⁾
Changing parateters see formular on page 57.

1. Parameterization			
1.1	Monitored motion ¹⁾		
	Translational	x	
	Rotational	-	
	Esc		OK
1.2	Encoder type ¹⁾		
	Lin. encoder	-	
	Rot. encoder	x	
	Esc		OK
1.3	Encoder selection		
	RJ45:Encoder + E2	x	
	RJ45:Encoder	-	
	E1 + E2	-	
	Esc		OK
1.4	Lead / transm.		
	Transmission		
	1 : 1		
	Lead		
	10,000	mm	
	Esc		OK
1.5	Encoder settings		
	Signal form		
	sin/cos or TTL	x	
	HTL	-	
	Resolution		
	1024	Imp/U	
	Esc		OK
1.6	Sensor settings		
	Sensor type		
	pnnp	x	
	nnp	-	
	Resolution E1		
	10	Imp/U	
	Resolution E2		
	10	Imp/U	
	Esc		OK
1.7	Speed limits		
	Automatic max		
	100	m/min	
	Automatic min		
	80	m/min	
	Set-up max		
	60	m/min	
	Set-up min		
	40	m/min	
	Standstill		
	10	m/min	
	Esc		OK
1.8	Times		
	Start override		
	5,0	s	
	Release delay		
	5,0	s	
	Switch-off monit.		
	5,0	s	
	Discrepancy time		
	5,0	s	
	Esc		OK
1.9	Start type		
	Manual start	x	
	Automatic start	-	
	Esc		OK
1.10	Prot. door monit.		
	Simultaneity on	x	
	Simultaneity off	-	
	Esc		OK
Esc			OK

2. Display settings			
2.1	Languages		
	English	x	
	Deutsch	-	
	Français	-	
	Español	-	
	Italiano	-	
	Esc		OK
2.2	Contrast		
	50	%	
	Esc		OK
2.3	Lighting		
	Off	-	
	3 s	-	
	10 s	x	
	1 min	-	
	5 min	-	
	On	-	
	Esc		OK
2.4	Diagnosis		
	Do not display	-	
	Display	x	
	Esc		OK
2.5	Error message		
	Do not display	-	
	Display	x	
	Esc		OK
2.6	Status indicator		
	Manual	x	
	3 s	-	
	10 s	-	
	1 min	-	
	5 min	-	
	Esc		OK
Esc			OK
3. Copy settings			
	Parameters		
	Display settings		
	Change lock		
	Copy everything		
	Esc		OK
4. Factory settings			
	Parameters		
	Display settings		
	Param. + disp. sett.		
	Esc		OK
5. Changes			
5.1	Lock		
	Activate		
5.2	Track		
	Activate		
	Esc		OK
Esc			OK

¹⁾ When changing this setting the values of 1.4, 1.5 and 1.7 will be reset to default values

²⁾ Customers specific variants have other factory settings. They are available on request.

Notes for Configuration

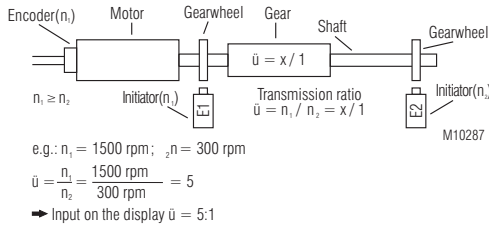
Installing the measuring sensors

Cross faults between measuring sensors must be excluded by an appropriate cable installation.

Gear ratio or shaft break monitoring

For certain applications, it may be necessary to set a gear ratio. To this end, the following arrangement of proximity sensors or encoder is required: It has to be taken into account that the rotational speed to be monitored on encoder or proximity sensor 1 (E1) must always larger than or equal to the rotational speed to be monitored on proximity sensor 2 (E2). The set speed limits on the display for a set gear ratio always refer to the encoder or proximity sensor 1 (E1).

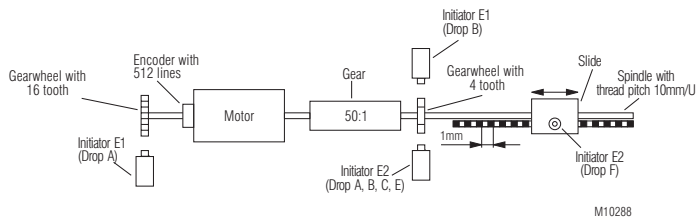
In the case that the gear arranged between E1 and E2 has no integer gear ratio, a corresponding adjustment is possible by a modification of the resolution settings for E1/E2 (pulses/rev. or mm).



This arrangement is also used to detect a shaft break. Taking the gear ratio into account, when the measured signals between sensor on the motor and sensor on the shaft do not correspond, the device immediately switches to a safe failure condition.

Configuration Examples

Monitored movement: Rotational; sensor type: Rotationally



Settings on the display based on the above example:

Case A:

Sensor selection: E1+E2
Proximity sensor resolution E1: 16 pulses/rev.
Proximity sensor resolution E2: 4 pulses/rev.
Gear ratio: 50:1
The speed limits (rpm) to be set refer to the rotational speed on proximity sensor E1.

Case B:

Sensor selection: E1+E2
Proximity sensor resolution E1: 4 pulses/rev.
Proximity sensor resolution E2: 4 pulses/rev.
Gear ratio: 1:1 (as measuring is on the same location)
The speed limits (rpm) to be set refer to the rotational speed on proximity sensor E1.

Case C:

Sensor selection: Encoder+E2
Encoder resolution: 512 pulses/rev.
Proximity sensor resolution E2: 4 pulses/rev.
Gear ratio: 50:1
The speed limits (rpm) to be set refer to the rotational speed on the encoder.

Case D:

Sensor selection: Encoder
Encoder resolution: 512 pulses/rev.
Gear ratio: Not relevant as only one sensor is selected.

The speed limits (rpm) to be set refer to the rotational speed on the encoder.

Case E: Monitoring of the cradle for 3m/min, for example

Sensor selection: Encoder+E2
Encoder resolution: 512 pulses/rev.
Proximity sensor resolution E2: 4 pulses/rev.
Gear ratio: 50:1

The rotational speed limits (rpm) to be set refer to the rotational speed on the encoder. Therefore, to monitor the cradle as shown, at first the translational movement has to be converted in a corresponding rotational movement. This is done as follows:

$$\begin{aligned} \text{Rotational monitoring limit} &= \frac{\text{Translational monitoring limit} \times \text{gear ratio}}{\text{Pitch}} \\ &= \frac{3 \text{ m/min} \times 50}{10 \text{ mm/U}} = 15000 \text{ U/min} \end{aligned}$$

Case F: Monitoring of the cradle for 3m/min, for example

Sensor selection: Encoder+E2
Encoder resolution: 512 pulses/rev.
Proximity sensor resolution E2: 10 pulses/rev. (1 mm/pulse)
Gear ratio: 50:1

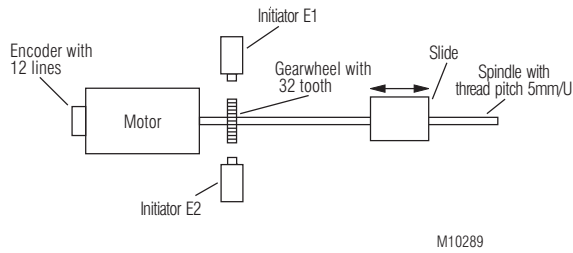
The rotational speed limits (rpm) to be set refer to the rotational speed on the encoder. Therefore, to monitor the cradle as shown, at first the translational movement has to be converted in a corresponding rotational movement. The resolution of the proximity sensor E2 has to be calculated too. This is done as follows:

$$\begin{aligned} \text{Rotational prox. sens resolution E2} &= \frac{\text{Pitch}}{\text{Translational proximity sensor resolution E2}} \\ &= \frac{10 \text{ mm/U}}{1 \text{ mm/Imp.}} = 10 \text{ Imp./U} \end{aligned}$$

$$\begin{aligned} \text{Rotational monitoring limit} &= \frac{\text{Translational monitoring limit} \times \text{gear ratio}}{\text{Pitch}} \\ &= \frac{3 \text{ m/min} \times 50}{10 \text{ mm/U}} = 15000 \text{ U/min} \end{aligned}$$

Configuration Examples

Monitored movement: Translational; sensor type: Rotationally



Settings on the display based on the above example:

Case A:

Sensor selection: E1+E2
 Proximity sensor resolution E1: 32 pulses/rev.
 Proximity sensor resolution E2: 32 pulses/rev.
 Pitch: 5 mm/rev.
 The speed limits (m/min) to be set refer to the rotational speed on proximity sensor E1.

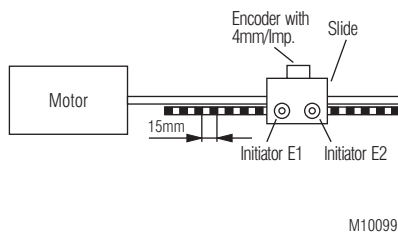
Case B:

Sensor selection: Encoder+E2
 Encoder resolution: 12 pulses/rev.
 Proximity sensor resolution E2: 32 pulses/rev.
 Pitch: 5 mm/rev.
 The speed limits (m/min) to be set refer to the rotational speed on the encoder.

Case C:

Sensor selection: Encoder
 Encoder resolution: 12 pulses/rev.
 Pitch: 5 mm/rev.
 The speed limits (m/min) to be set refer to the rotational speed on the encoder.

Monitored movement: Translational; sensor type: Linear



Settings on the display based on the above example:

Case A:

Sensor selection: E1+E2
 Proximity sensor resolution E1: 15 mm/pulse
 Proximity sensor resolution E2: 15 mm/pulse
 The speed limits (m/min) to be set refer to the frequency on proximity sensor E1.

Case B:

Sensor selection: Encoder+E2
 Encoder resolution: 4 mm/pulse
 Proximity sensor resolution E2: 15 mm/pulse
 The speed limits (m/min) to be set refer to the frequency on the encoder.

Case C:

Sensor selection: Encoder
 Encoder resolution: 4 mm/pulse
 The speed limits (m/min) to be set refer to the frequency on the encoder.

Technical Data

Input

Nominal voltage U_N:	AC/DC 110 ... 240 V, DC 24 V
Voltage tolerance	
AC/DC:	0.8 ... 1.2 U_N
DC:	0.9 ... 1.1 U_N
Nominal frequency (AC):	50 / 60 Hz
Frequency range (AC):	45 ... 65 Hz
max. residual ripple (DC):	48 %
Nominal consumption	
AC/DC:	< 6.5 W
DC:	< 5 W
Min. Off-time:	
AC/DC:	600 ms
DC:	150 ms
Start up time delay t_a:	Adjustable from 0 ... 999 s
Reset delay time t_r:	Adjustable from 0 ... 999 s
Switch-off monitoring time t_s:	Adjustable from 0.5 ... 999 s
Discrepancy time t_d:	Adjustable from 1 ... 250 s
Measuring accuracy:	± 2 %
Hysteresis:	6.25 %

Initiators

Input current:	DC 24 V (provided by the device)
Output:	As option PNP or NPN
Voltage on E1 and E2:	Min. DC 10 V
Min. pulse duration e. g. on and off time:	75 μ s
Input frequency:	< 3 kHz
Response value:	Adjustable from 1 Hz ... 2 kHz

Encoder

Version:	With 2 signal paths (A, B) and their inverted signals ($\bar{A}$, $\bar{B}$)
Output:	As option TTL (LOW-Level ≤ 2 V, HIGH-Level ≥ 3 V) HTL (LOW-Level ≤ 2 V, HIGH-Level ≥ 3 V) sin/cos ($U_A = 1 V_{PP} \pm 10$ % (differential signal A to /A or B to /B), $U_{offset} = 2.5 V \pm 10$ %) When RJ45: Encoder is selected in setup routine under item 1.3 (sensor selection) a defined failure behaviour is necessary (high resistive outputs) in the case of missing powersupply or internal encoder failure. No synthetically generated signals may be used as input signals. A forced dynamisation (t < 24 h) is necessary during longer standstill periods.
Input frequency:	< 550 kHz
Response value:	Adjustable from 1 Hz ... 400 kHz

Special Version NAMUR

Supply voltage:	DC 8,2 V (provided by the device)
Input current:	Max. 10 mA
Response value	
Low:	Typ. 1.6 mA
High:	Typ. 1.8 mA
Broken wire:	≤ 0.15 mA
Short circuit:	> 6.0 mA
Min. pulse duration e. g. on and off time:	75 μ s
Input frequency:	< 3 kHz
Response value:	Adjustable from 1 Hz ... 2 kHz

Output

Contacts	2 safe relay groups with each 2 NO contacts in series Relay positive guide Max. 5 A (see quadratic total current limit curve)
Contact:	
Thermal current I_{th}:	
Switching capacity	
to AC 15	
NO contact:	3 A / AC 230 V IEC/EN 60947-5-1
to DC 13	
NO contact:	1 A / DC 24 V IEC/EN 60947-5-1
to DC 13	
NO contact:	4 A / 24 V at 0.1 Hz
Electrical life	
at 5 A, AC 230 V $\cos \varphi = 1$:	$\geq 1 \times 10^5$ switching cycles IEC/EN 60947-5-1

Technical Data		
Short circuit strength	4 A gG / gL IEC/EN 60947-5-1	
max. fuse rating:	≥ 50 x 10 ⁶ switching cycles	
Mechanical life:		
Semiconductor monitoring output:	2 piece; 20 mA DC 24 V, plus switching	
General Data		
Nominal operating mode:	Continuous operation	
Temperature range		
Operation:	- 20 ... + 60 °C (see quadratic total current limit curve) At an altitude of > 2000 m the maximum permissible temperature reduces by 0.5 °C / 100 m	
Storage:	- 20 ... + 70 °C	
Altitude,		
Clearance and creepage distance		
Rated impulse voltage / pollution degree:	IEC 60664-1 ≤ 2000 m > 2000 m to ≤ 4000 m	
Contacts against all others:	6 kV / 2 4 kV / 2	
Contacts 13/14, 23/24 to 43/44, 53/54:	6 kV / 2 4 kV / 2	
Contacts 13/14 to 23/24 resp. 43/44 to 53/54:	4 kV / 2 2,5 kV / 2	
A1/A2 (at supply voltage AC/DC110...240V) against all others:	6 kV / 2 4 kV / 2	
EMC	IEC/EN 61800-3	
Interference suppression:	Limit value classe B	EN 55011
Degree of protection:	IP 20	IEC/EN 60529
Housing:	Thermoplastic with VO behaviour acc. to UL subject 94	
Vibration resistance:	Amplitude 0,35 mm frequency 10 ... 55 Hz, IEC/EN 60068-2-6	
Climate resistance:	20 / 060 / 04	IEC/EN 60068-1
Terminal designation:	EN 50005	
Wire connection:	DIN 46228-1/-2/-3/-4	
Wire fixing:	Captive slotted screw or cage clamp terminals	
Mounting:	DIN rail	IEC/EN 60715
Weight:	Approx. 420 g	
Dimensions		
Width x height x depth:	45 x 107 x 121 mm	

UL-Data

The safety functions were not evaluated by UL. Listing is accomplished according to requirements of Standard UL 508, "general use applications"

Nominal voltage U_N:	
DC 24 V:	Device must be supplied with a Class 2 or a voltage / current limited power supply (max. 4 A).
AC/DC 110 ... 240 V, 50 / 60 Hz:	single or double phase
Ambient temperature:	0 ... + 60°C
Altitude:	≤ 2000 m
Switching capacity	
Semiconductor outputs:	24Vdc, 20mA, pilot duty
Switching capacity	
Release circuit	
U _N = DC 24 V:	Pilot duty B300 5A 250Vac resistive only 5A 24Vdc resistive only
U _N = AC/DC 110 ... 240 V:	
Ambient temperature 60°C:	Pilot duty B300 2A 250Vac resistive only
Ambient temperature 40°C:	Pilot duty B300 5A 250Vac resistive only
Wire connection:	60°C / 75°C copper conductors only
Plugin screw terminal:	AWG 28 - 12 Sol/Str Torque 0.5 Nm
Plugin cage clamp terminal:	AWG 24 - 12 Sol/Str
Plugin twin cage clamp terminal:	AWG 24 - 16 Sol/Str



Technical data that is not stated in the UL-Data, can be found in the technical data section.

Standard Type	
UH 5947.04PS/61	DC 24 V
Article number:	0063476
• Safety output:	2 NO contacts for standstill monitoring 2 NO contacts for monitoring of speed range (window)
• Nominal voltage U _N :	DC 24 V
• Width:	45 mm

Variants

UH 5947.04	/	0	/	61	DC 24 V
					Nominal voltage DC 24 V AC/DC 110 ... 240 V UL approval Sensor types 0 = For PNP- NPN sensors 1 = For NAMUR sensor Function 0 = Standard 1 = At sensor selection „E1+E2“ The semiconductor outputs give out the incoming signal of E1 with a ratio 1:2. Other sensor selection: The semiconductor outputs have no function 2 = The transistor outputs 38 and 68 are continuously on when the unit is on operation and are switched off as soon as a failure is detected Customers specific factory setting, on request Type of terminals PC (plug in cage clamp): Pluggable terminal blocks with cage clamp terminals PS (plug in screw): Pluggable terminal blocks with screw terminals PT (plug in Twin cage clamp): Pluggable terminal blocks, with cage clamp terminals 2-wire Type

Accessories

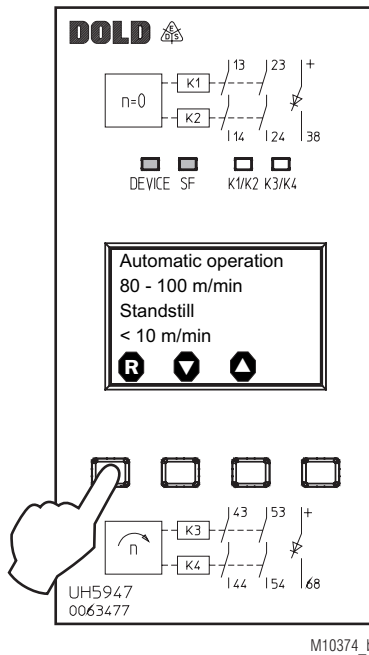
OA5947/100:	Connection cable for copy function and adaptor Article number: 0063515
KY5947 H1/S1:	15 pole adaptor to connect an encoder or for controllers of Siemens /Heidenhain with corresponding PIN arrangement (see remarks for accessories in operating manual) Article number: 0063513
KY5947 H2/S4:	25 pole adaptor to connect an encoder or for controllers of Siemens /Heidenhain with corresponding PIN arrangement (see remarks for accessories in operating manual) Article number: 0063514

Troubleshooting

Failure	Potential cause
LED "SF" ON	- External failure (detailed description on display)
LED "Device" ON red	- Device failure (if the failure still exists after restart, replace device)
LED "Device" flashes red	- Parameter failure (min. one adjusted frequency to be monitored is out of range)

Fault Handling

When faults are detected on or in the device they are indicated on the display by an appropriate message. If a reset of the device is necessary due to the fault, at first the alarm and the associated diagnostic message have to be acknowledged. Then, the left key has to be pressed for approx. 3 sec. to initiate a reset of the device.



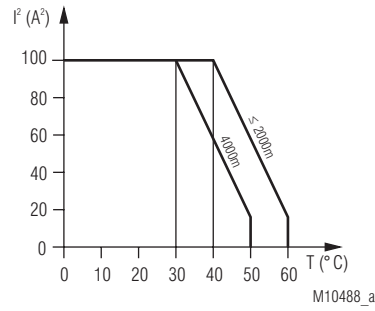
M10374_b

If a system failure is detected again after restart the device must be replaced and sent back to manufacturer.

Maintenance and Repairs

- The device contains no parts that require maintenance.
- In case of failure, do not open the device but send it to manufacturer for repair.

Characteristics



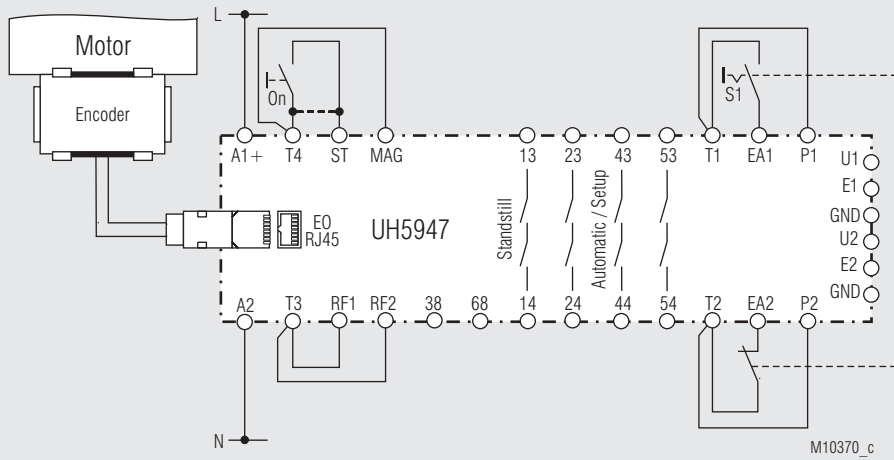
Max. current at 60°C (≤ 2000m) or 50 °C (4000m) over
4 contactrows = $2A \cong 4 \times 2^2 A^2 = 16 A^2$

$$I^2 = I_1^2 + I_2^2 + I_3^2 + I_4^2$$

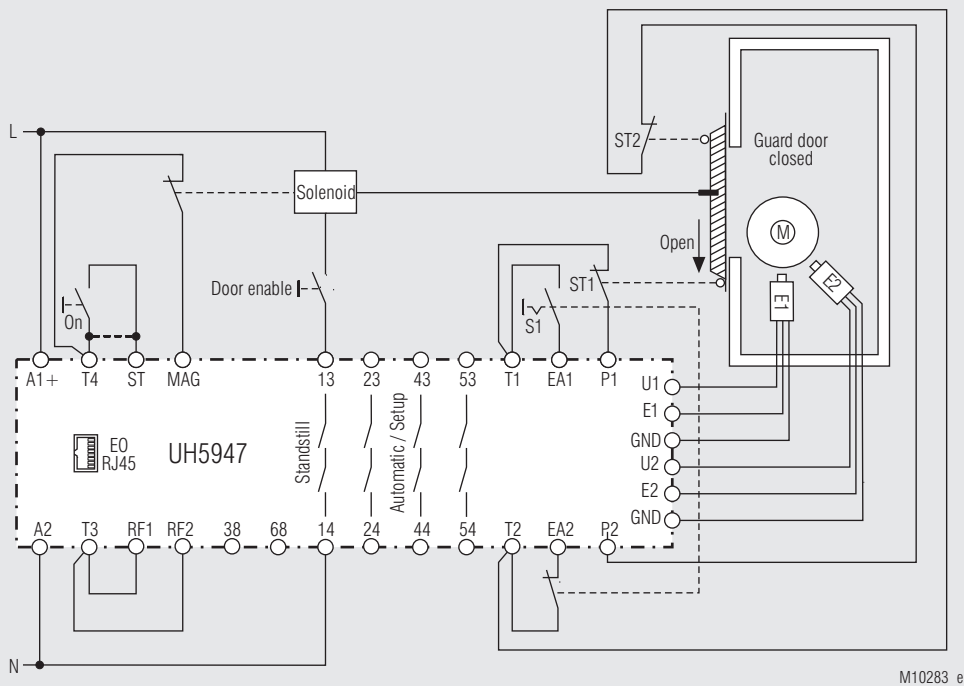
I_1, I_2, I_3, I_4 - Current in contactrows

Quadratic total current limit curve

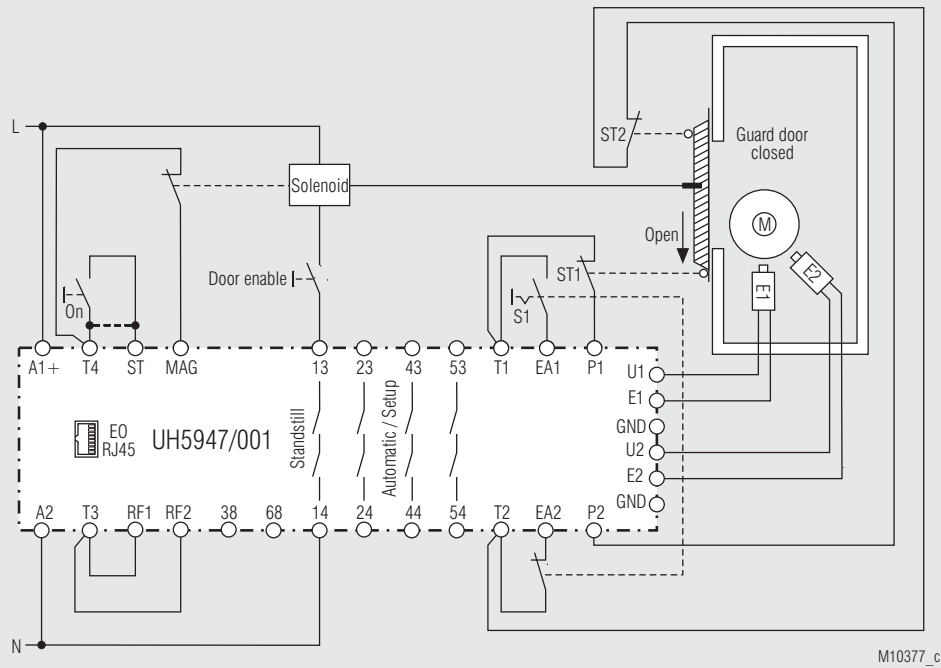
At an altitude > 2000 m adjustment of the curve by - 0.5° C / 100 m
(see example 4000 m)



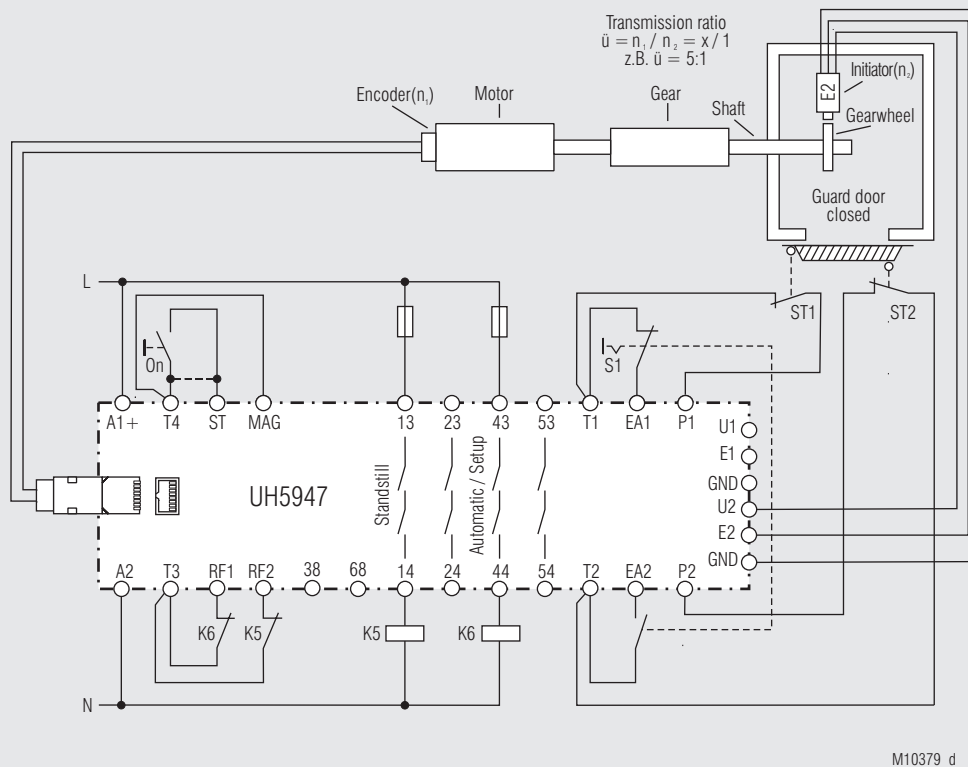
Rotational speed and standstill monitoring with suitable encoder, automatic mode; for manual start: ON/OFF pushbutton to T4/ST; for automatic start: jumper to T4/ST; suited up to SIL3, Performance Level e, Cat. 4 (Requirement for Cat. 4 is, that during longer periods of standstill a forced dynamisation ($t < 24$ h) has to be carried out).



Two-channel rotational speed and standstill monitoring by means of two NPN or PNP proximity sensors; automatic mode; safety gate monitoring active; for manual start: ON/OFF pushbutton to T4/ST; for automatic start: jumper to T4/ST; suited up to SIL3, Performance Level e Cat. 4 (Requirement for Cat. 4 is, that during longer periods of standstill a forced dynamisation ($t < 24$ h) has to be carried out).

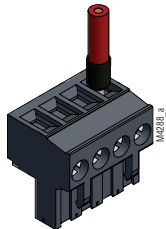
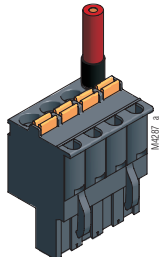
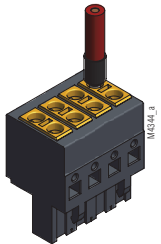
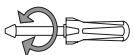
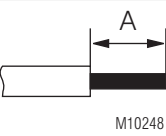
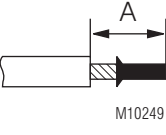
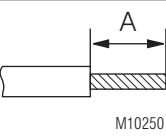


Rotational speed and standstill monitoring by means of encoder and two NAMUR-sensor; automatic mode; safety gate monitoring active; for manual start: ON/OFF pushbutton to T4/ST; for automatic start: jumper to T4/ST; suited up to SIL3, Performance Level e; Cat. 4

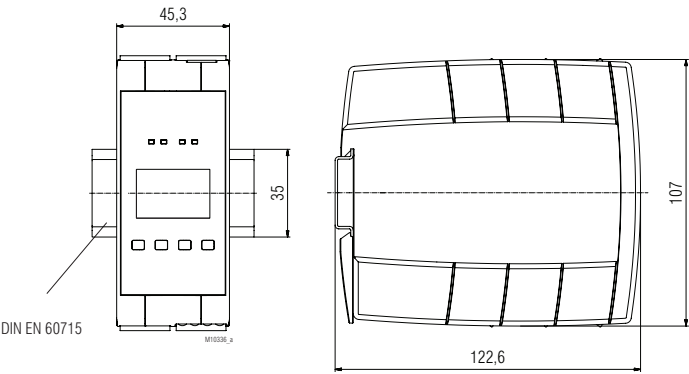


Rotational speed and standstill monitoring by means of encoder and one NPN or PNP proximity sensor; setup mode; gear ratio set; safety gate monitoring active; for manual start: ON/OFF pushbutton to T4/ST; for automatic start: jumper to T4/ST; suited up to SIL3, Performance Level e, Cat. 4 (Requirement for Cat. 4 is, that during longer periods of standstill a forced dynamisation ($t < 24$ h) has to be carried out).

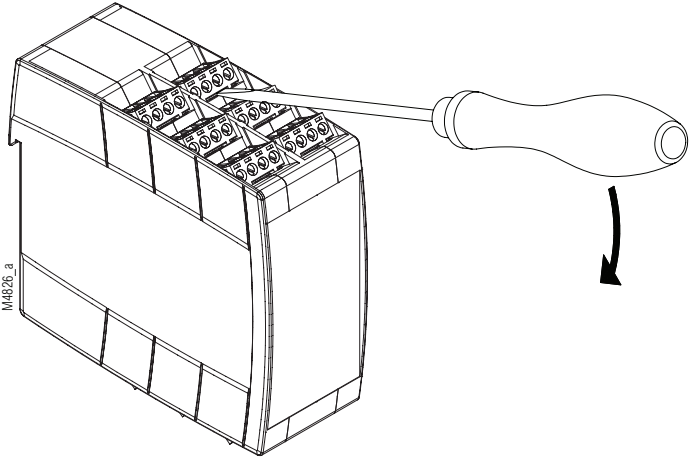
DE	Anschlussstechnik
EN	Connection Technology
FR	Technologie de connexion

	Schraubklemmen, abnehmbar Screw terminals, pluggable Bornes à vis, amovibles	Federkraftklemmen, abnehmbar Cage clamp terminals, pluggable Bornes ressorts, amovibles	Federkraftklemmen 2-Leiter, abnehmbar Cage clamp terminals 2-wire, pluggable Bornes ressorts 2 conducteurs, amovibles
	 PS	 PC	 PT
	DIN 5264-A; 0,6 x 3,5 0,5 Nm 5 LB. IN	DIN 5264-A; 0,6 x 3,5	DIN 5264-A; 0,4 x 2,5
 M10248	A = 7 mm 1 x 0,2 ... 2,5 mm ² 1 x AWG 24 to 12 2 x 0,2 ... 1,0 mm ² 2 x AWG 24 to 18	A = 10 mm 1 x 0,2 ... 2,5 mm ² 1 x AWG 24 to 12	A = 8 mm 1 x 0,2 ... 1,5 mm ² 1 x AWG 24 to 16
 M10249	A = 7 mm 1 x 0,25 ... 2,5 mm ² 1 x AWG 24 to 12 2 x 0,25 ... 1,0 mm ² 2 x AWG 24 to 18	A = 10 mm 1 x 0,25 ... 2,5 mm ² 1 x AWG 24 to 12 2 x 0,25 ... 1,5 mm ² mit TWIN-Aderendhülse	A = 8 mm 1 x 0,25 ... 1,5 mm ² 1 x AWG 24 to 16
 M10250	A = 7 mm 1 x 0,2 ... 2,5 mm ² 1 x AWG 24 to 12 2 x 0,2 ... 1,5 mm ² 2 x AWG 24 to 16	A = 10 mm 1 x 0,2 ... 2,5 mm ² 1 x AWG 24 to 12	A = 8 mm 1 x 0,2 ... 1,5 mm ² 1 x AWG 24 to 16

DE	Maßbild (Maße in mm)
EN	Dimensions (dimensions in mm)
FR	Dimensions (dimensions en mm)



DE	Montage / Demontage der PS / PC-Klemmenblöcke
EN	Mounting / disassembly of the PS / PC terminal blocks
FR	Montage / Démontage des borniers PS / PC

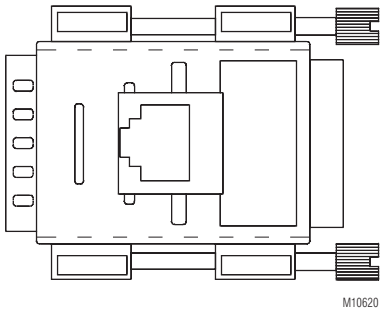


DE	Zubehör
EN	Accessories
FR	Accessoires

KY 5947 H1/S1

DE	Der 15-polige Adapter dient als Verbindung zwischen Encoder, Steuerung und dem Drehzahlwächter. Er ist für Steuerungen von Siemens/Heidenhain mit folgender PIN-Belegung ausgelegt:
EN	15 pole adaptor to connect an encoder or for controllers of Siemens /Heidenhain with corresponding PIN arrangement (see remarks for accessories in operating manual)
FR	Adaptateur de liaison à 15 poles pour le branchement du codeur ou pour le branchement de la commande Siemens/Heidenhein avec l'affectation des points défini. (Voir remarques dans la notice 'utilisation)

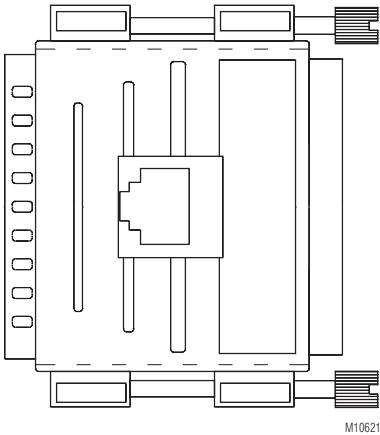
Signal	SUB-D15	RJ45
VCC	1	2
GND	2	1
A	3	3
$\bar{A}$	4	4
B	6	6
$\bar{B}$	7	8



KY 5947 H2/S4

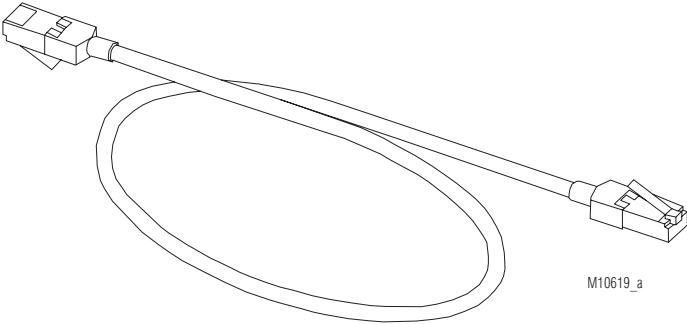
DE	Der 25-polige Adapter dient als Verbindung zwischen Encoder, Steuerung und dem Drehzahlwächter. Er ist für Steuerungen von Siemens/Heidenhain mit folgender PIN-Belegung ausgelegt:
EN	25 pole adaptor to connect an encoder or for controllers of Siemens /Heidenhain with corresponding PIN arrangement (see remarks for accessories in operating manual)
FR	Adaptateur de liaison à 25 poles pour le branchement du codeur ou pour le branchement de la commande Siemens/Heidenhein avec l'affectation des points défini. (Voir remarques dans la notice 'utilisation)

Signal	SUB-D25	RJ45
VCC	1	2
GND	2	1
A	3	3
$\bar{A}$	4	4
B	6	6
$\bar{B}$	7	8



OA 5947/100

DE	Verbindungskabel für Kopierfunktion und Adapter.
EN	Connection cable for copy function and adaptor
FR	Cable de liaison pour la fonction copie avec connecteur RJ45



DE	Sicherheitstechnische Kenndaten
EN	Safety Related Data
FR	Données techniques sécuritaires

EN ISO 13849-1:	Betriebshöhe ≤ 2000 m	Betriebshöhe > 2000 m bis ≤ 4000 m	
Kategorie / Category:	4	4	
PL:	e	e	
MTTF _d :	122	109	a (year)
DC _{avg} :	97,5	96,64	%
d _{op} :	365	365	d/a (days/year)
h _{op} :	24	24	h/d (hours/day)
t _{cycle} :	3600	3600	s/cycle
	≥ 1	≥ 1	/h (hour)

EN IEC 62061 EN 61508:			
maximum SIL	3	3	EN IEC 62061
SIL:	3	3	EN 61508
HFT ¹⁾ :	1	1	
DC:	97,5	96,64	%
PFH _D :	3,03E-09	3,34E-09	h ⁻¹
T ₁ :	20	20	a (year)
¹⁾ HFT = Hardware-Fehlertoleranz Hardware failure tolerance Tolérance défauts Hardware			

Anforderung seitens der Sicherheitsfunktion an das Gerät		Intervall für zyklische Überprüfung der Sicherheitsfunktion
Demand to our device based on the evaluated necessary safety level of the application.		Intervall for cyclic test of the safety function
Consigne résultant de la fonction sécuritaire de l'appareil		Interval du contrôle cyclique de la fonction sécuritaire
nach, acc. to, selon EN ISO 13849-1	PL e with Cat. 3	einmal pro Monat once per month mensuel
	PL d with Cat. 3	einmal pro Jahr once per year annuel
nach, acc. to, selon EN IEC 62061, EN 61508	maximum SIL 3, SIL 3 with HFT = 1	einmal pro Monat once per month mensuel
	maximum SIL 2, SIL 2 with HFT = 1	einmal pro Jahr once per year annuel



DE	Die angeführten Kenndaten gelten für die Standardtype. Sicherheitstechnische Kenndaten für andere Geräteausführungen erhalten Sie auf Anfrage. Die sicherheitstechnischen Kenndaten der kompletten Anlage müssen vom Anwender bestimmt werden.
EN	The values stated above are valid for the standard type. Safety data for other variants are available on request. The safety relevant data of the complete system has to be determined by the manufacturer of the system.
FR	Les valeurs données sont valables pour les produits standards. Les valeurs techniques sécuritaires pour d'autres produits spéciaux sont disponibles sur simple demande. Les données techniques sécuritaires de l'installation complète doivent être définies par l'utilisateur.

DE	EG-Konformitätserklärung
EN	CE-Declaration of Conformity
FR	Déclaration de conformité européenne

EG - Konformitätserklärung

Declaration of Conformity

Déclaration de conformité européenne



Hersteller: E. Dold & Söhne GmbH & Co. KG
Manufacturer: / Fabricant:
Anschrift: Bregstraße 18
Address: / Adresse: 78120 Furtwangen
Germany

Produktbezeichnung: Drehzahlwächter **UH5947.04tt/xyzccc** mit: tt = PS, PC, PT
Product description: Speed Monitor *with:* x = 0, 1, 2 und yz = 00, 01
Désignation du produit: Contrôleur de vitesse de rotation *avec:* optional ccc = /60 .. /69

Das bezeichnete Produkt stimmt mit den Vorschriften folgender europäischer Richtlinien überein:
The indicated product is in conformance with the regulations of the following european directives:
Le produit désigné est conforme aux instructions des directives européennes:

Maschinenrichtlinie:	2006/42/EG	EU-Abl. L157/24, 09.06.2006
<i>Machinery directive: / Directives Machines:</i>		
EMV - Richtlinie:	2014/30/EU	EU-Abl. L96/79, 29.03.2014
<i>EMC - Directive: / Directives- CEM::</i>		
RoHS - Richtlinie	2011/65/EU	EU-Abl. L174/88, 01.07.2011
<i>RoHS -Directive: / Directives - RoHS:</i>		

Prüfgrundsätze:	EN ISO 13849-1:2015	EN IEC60664-1:2020
<i>Basis of Testing:</i>	EN 61800-5-2:2007	EN 61800-5-2:2017
<i>Lignes de contrôle:</i>	EN 61508 Parts 1-7:2010	EN 61800-3:2004 + A1:2012
	EN 61326-1:2013	EN 61326-3-1:2017
	EN 61000-6-1:2007	EN 61000-6-2:2005 + AC:2005
	EN 61000-6-3:2007 + A1:2011 + AC:2012	EN61000-6-4:2007 + A1:2011
	EN 61000-6-7:2015	EN 55011:2016 + A1:2017

Die Übereinstimmung eines Baumusters des bezeichneten Produktes mit der oben genannten Maschinenrichtlinie wurde bescheinigt durch:

Consistency of a production sample with the marked product in accordance to the above machinery directive has been certified by:
La conformité d'un échantillon du produit désigné aux directives machines susmentionnées a été certifiée par:

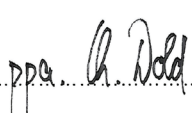
Benannte Stelle: TÜV Rheinland Industrie Service GmbH,
Certification office: / l'organisme notifié: Am Grauen Stein, 51105 Köln
Nummer der benannten Stelle: NB0035
Number of certification office: / Numéro de l'organisme notifié:
Nummer der Bescheinigung: 01/205/5161.03/22
Certification number: / Numéro de certificat:
Ausstelldatum : 22.11.2022
Date of issue: / Date de délivrance:

Für die Zusammenstellung der technischen Unterlagen ist bevollmächtigt:
For the compilation of technical documents is authorized:
Pour la composition des documents techniques est autorisé:


.....
Gamal Hagar – Entwicklungsleiter / R&D Manager

Rechtsverbindliche Unterschrift:

Signature of authorized person:
Signature du PDG :


.....
Christian Dold – Produktmanagement

Ort, Datum : Furtwangen, 28.11.2022
Place, Date: / Lieu, date:

Diese Original - Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, beinhaltet jedoch keine Zusicherung von Eigenschaften. Die Sicherheitshinweise der Produktdokumentation sind zu beachten.
This original declaration confirms the conformity of the mentioned directives but does not comprise any guarantee of the product characteristics. The safety directives of the product documentation are to be considered.
Cette déclaration originale certifie la conformité des directives nommées mais ne comprend aucune garantie des caractéristiques du produit. Les directives de sécurité de la documentation du produit sont à considérer.

DE	UKCA-Konformitätserklärung
EN	UKCA-Declaration of Conformity
FR	Déclaration de conformité UKCA

UK Declaration of Conformity



Manufacturer: E. Dold & Söhne GmbH & Co. KG

Address: Bregstraße 18
78120 Furtwangen
Germany

Product description: Speed Monitor **UH5947.04tt/xyzccc** mit: tt = PS, PC, PT
x = 0, 1, 2, and yz = 00, 01
optional ccc = /60 .. /69

The indicated product is in conformance with the regulations of the following British regulations:

Supply of Machinery (Safety) Regulations: S.I. 2008 No. 1597

Electromagnetic Compatibility Regulations: S.I. 2016 No. 1091

RoHS Regulations: S.I. 2012 No. 3032

Designated standards:	EN ISO 13849-1:2015	EN IEC 60664-1:2020
	EN 61800-5-2:2007	EN 61800-5-2:2017
	EN 61508 Parts 1-7:2010	EN 61800-3:2004 + A1:2012
	EN 61326-1:2013	EN 61326-3-1:2017
	EN 61000-6-1:2007	EN 61000-6-2:2005
	EN 61000-6-3:2007 + A1:2011	EN 61000-6-4:2007 + A1:2011
	EN 61000-6-7:2015	EN 55011:2016 + A1:2017

Consistency of a production sample with the marked product in accordance to the above machinery directive has been certified by:

Certification office: TÜV Rheinland UK Ltd., Friars Gate(Third Floor),
1011 Stratford Road, Shirley, Solihull B90 4BN, United Kingdom
2571

Number of certification office:

Certification number: 01/205U/5161.00/22

Date of issue: 2022-12-02

For the compilation of technical documents is authorized: **Signature of authorized person:**

Dold Industries Ltd

11 Hamberts Rd. Blackall Ind. Estate
South Woodham Ferrers
GB - Essex, CM3 5UV

ppa. *Ch. Dold*

Christian Dold - Productmanagement

Place, Date : Furtwangen, 2022-12-06

This original declaration confirms the conformity of the mentioned directives but does not comprise any guarantee of the product characteristics. The safety directives of the product documentation are to be considered.

Handwritten signature

1. Parametrierung	
1.1 Überwachte Bewegung ¹⁾	
	Translatorisch
	Rotatorisch
Esc	OK
1.2 Geberart ¹⁾	
	Lin. Geber
	Rot. Geber
Esc	OK
1.3 Geberauswahl	
	RJ45:Encoder + E2
	RJ45:Encoder
	E1 + E2
Esc	OK
1.4 Steigung / Übersetzung	
	Übersetzung
	: 1
	Steigung
	mm
Esc	OK
1.5 Endcodereinstellungen	
	Signalform
	sin/cos oder TTL
	HTL
	Auflösung
	bzw. Imp/U bzw. mm
Esc	OK
1.6 Initiatoreinstellungen	
	Initiatorart
	pnp
	nnp
	Auflösung E1
	bzw. Imp/U bzw. mm
	Auflösung E2
	bzw. Imp/U bzw. mm
Esc	OK
1.7 Drehzahlgrenzen	
	Automatik max
	U/min bzw. m/min
	Automatik min
	U/min bzw. m/min
	Einricht max
	U/min bzw. m/min
	Einricht min
	U/min bzw. m/min
	Stillstand
	U/min bzw. m/min
Esc	OK
1.8 Zeiten	
	Anlaufüberbrückung
	s
	Freigabeverzögerung
	s
	Abschaltüberwachung
	s
	Diskrepanzzeit
	s
Esc	OK
1.9 Startart	
	Manueller Start
	Automatischer Start
Esc	OK
1.10 Schutztürüberwachung	
	Gleichzeitigkeit an
	Gleichzeitigkeit aus
Esc	OK

Gerät: UH 5947

Gerätenummer:

Konfiguration

durchgeführt von:

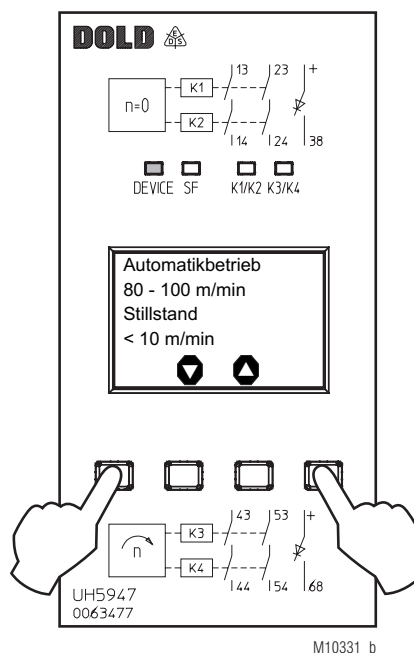
Datum:

Parametrierung

Parametrierung anhand des Displays

Um in den Parametriermodus des Gerätes zu gelangen ist folgende Tastenkombination vorgesehen:

Als erstes muss die rechte Taste betätigt werden und gedrückt bleiben. Zusätzlich muss nun die linke Taste betätigt werden (siehe unten). Es folgt ein Displaytest, der bei korrektem Ablauf mit der OK - Taste (rechte Taste) bestätigt werden muss. Im Anschluss kann die Parametrierung geändert werden. Bevor das Gerät die geänderten Parameter übernimmt, müssen diese zur Sicherheit nochmals bestätigt werden.



1. Parameterization**1.1 Monitored motion ¹⁾**Translational
Rotational

Esc

OK

1.2 Encoder type ¹⁾Lin. encoder
Rot. encoder

Esc

OK

1.3 Encoder selectionRJ45:Encoder + E2
RJ45:Encoder
E1 + E2

Esc

OK

1.4 Lead / transm.

Transmission

: 1

Lead

mm

Esc

OK

1.5 Encoder settings**Signal form**sin/cos or TTL
HTL**Resolution**

resp. Imp/U resp. mm

Esc

OK

1.6 Sensor settings**Sensor type**pnp
npn**Resolution E1**

resp. Imp/U resp. mm

Resolution E2

resp. Imp/U resp. mm

Esc

OK

1.7 Speed limits**Automatic max**

U/min resp. m/min

Automatic min

U/min resp. m/min

Set-up max

U/min resp. m/min

Set-up min

U/min resp. m/min

Standstill

U/min resp. m/min

Esc

OK

1.8 Times**Start override**

s

Release delay

s

Switch-off monit.

s

Discrepancy time

s

Esc

OK

1.9 Start typeManual start
Automatic start

Esc

OK

1.10 Prot. door monit.Simultaneity on
Simultaneity off

Esc

OK

Esc

OK

Device: UH 5947

Device No.:

Configured by:

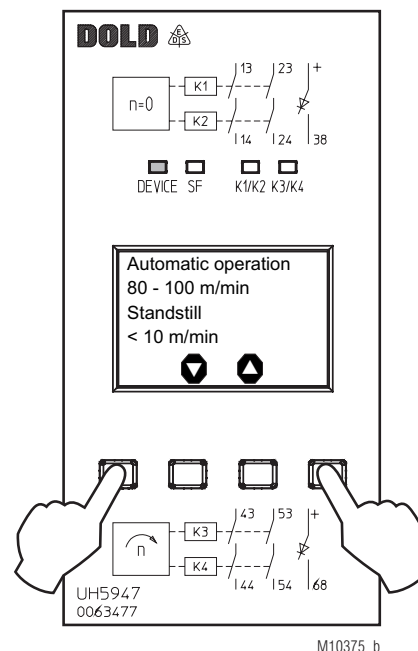
Date:

Parameterization

Parameterization using the display

To enter the device's parameterization mode the following key combination is provided:

Press and keep pressed the right key at first. Then, press the left key (see below). A display test follows and has to be acknowledged using the OK key (right key) when it was successful. Then, it is possible to change the parameterization. Before the device adopts changed parameters, they must be confirmed once more for safety reasons.



1. Paramétrage	
1.1 Déplac. surveillé ¹⁾	
	Translation
	Rotation
Esc	OK
1.2 Type de capteur ¹⁾	
	Capteur lin.
	Capteur rot.
Esc	OK
1.3 Sélection capteur	
	RJ45:codeur + E2
	RJ45:codeur
	E1 + E2
Esc	OK
1.4 Pas/rap. transm.	
	Transmission
	: 1
	Pas
	mm
Esc	OK
1.5 Réglage codeur	
	Forme de signal
	sin/cos ou TTL
	HTL
	Résolution
	resp. Imp/U resp. mm
Esc	OK
1.6 Réglage initiateur	
	Type d'initiateur
	pnp
	nnp
	Résolution E1
	resp. Imp/U resp. mm
	Résolution E2
	resp. Imp/U resp. mm
Esc	OK
1.7 Limite vitesse	
	Automatique max
	U/min resp. m/min
	Automatique min
	U/min resp. m/min
	Réglage max
	U/min resp. m/min
	Réglage min
	U/min resp. m/min
	Arrêt
	U/min resp. m/min
Esc	OK
1.8 Temps	
	Shuntage démarrage
	s
	Retard validation
	s
	Surveillance coupure
	s
	Temps discordance
	s
Esc	OK
1.9 Type démarrage	
	Démarrage manuel
	Démarrage auto
Esc	OK
1.10 Surv. p sécurité	
	Simultanéité ON
	Simultanéité OFF
Esc	OK

Appareil: UH 5947

N° de appareil:

Configuration
effectuée par:

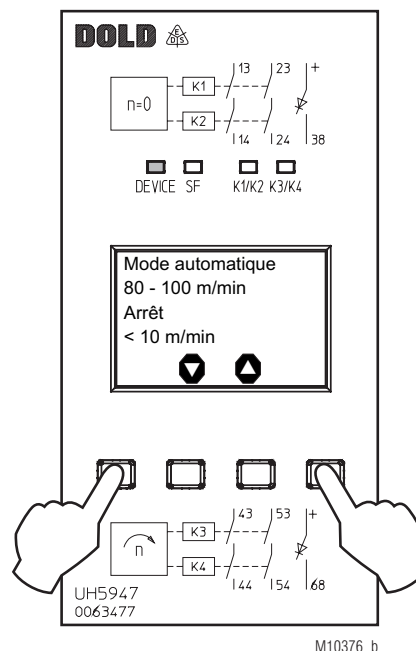
Date:

Paramétrage

Paramétrage à l'aide de l'écran

La combinaison de touches suivante est prévue pour activer le mode paramétrage de l'appareil:

Actionner d'abord la touche droite et la maintenir appuyée. Actionner ensuite la touche gauche (voir ci-dessous). Ensuite, l'appareil effectue un test de l'écran qui doit être confirmé en actionnant la touche OK en cas de déroulement correct (touche droits). Le paramétrage peut être modifié par la suite. Les paramètres doivent être confirmés de nouveau pour des raisons de sécurité avant d'être acceptés par l'appareil.



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