

# **KERN**

## **KERN & Sohn GmbH**

Ziegelei 1  
D-72336 Balingen  
email: [info@kern-sohn.com](mailto:info@kern-sohn.com)

Phone: +49-[0]7433- 9933-0  
Fax: +49-[0]7433-9933-149  
Internet: [www.kern-sohn.com](http://www.kern-sohn.com)

## **Operating instructions Statistics printer**

### **KERN YKS-01**

Version 1.2  
2020-03  
GB



**YKS-01-BA-e-2012**



# KERN YKS-01

Version 1.2 2020-02

## Operating Manual

### Statistics printer

#### Table of Contents

1	Technical Data.....	3
2	Declaration of Conformity .....	4
3	Unpacking.....	4
4	Installation and commissioning .....	4
5	Printer parts.....	5
6	Preparing your printer for operation .....	5
7	Operating elements .....	8
8	Start-up .....	8
9	Statistics function .....	9
9.1	Zeroing of statistics counter .....	9
9.2	Arithmetic mean value of the basic totality: .....	10
9.3	Standard deviation of the basic totality .....	10
9.4	Standard deviation of a random sample .....	10
10	GLP log .....	11
11	Storage conditions and use of thermal paper .....	12
12	Printer cable .....	12
13	Cleaning.....	13
14	Instant help.....	14

Printer YKS-01 is a standard thermal printer

## 1 Technical Data

<b>Printout</b>	Bi-directional thermal print with moveable 8 dot matrix head
<b>Character composition</b>	8x8 dot matrix
<b>Print speed</b>	0.75 lines
<b>Number of characters per line</b>	40, 80
<b>Character set</b>	IBM set 2
<b>Thermal paper</b>	One roll, width 112mm, length 20m
<b>Max. winding diameter</b>	42 m
<b>Electric Supply</b>	8.5 V – 14 V DC
<b>External power supply unit</b>	230 V 50 Hz 0.12 A / 9V DC 1.3 A
<b>Energy consumption</b>	3 W 15W
<b>Supply interface</b>	Type Jack 2.1
<b>Baud rate</b>	1200, 2400, 4800, 9600 Baud
<b>Parameter/data format</b>	8 or 7 bits, with or without parity control
<b>Parity</b>	Even or odd
<b>Transfer protocol</b>	Hardware-related DTR
<b>Working life</b>	5000 hours or 500 000 lines
<b>Operating temperature</b>	5°C – 35°C
<b>Humidity of air</b>	max. 80 % relative (not condensing)
<b>Dimensions</b>	165 x 140 x 50 mm
<b>Weight</b>	0.45 kg (excl. paper roll)

## 2 Declaration of Conformity

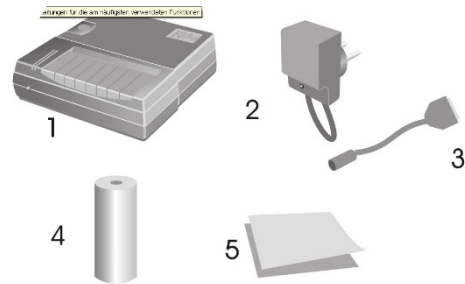
To view the current EC/EU Declaration of Conformity go to:

[www.kern-sohn.com/ce](http://www.kern-sohn.com/ce)

## 3 Unpacking

Delivery includes:

- 1 - Printer
- 2 – Power supply unit
- 3 – Printer cable
- 4 - 1 x Roll of thermal paper
- 5 – Operating instructions



If one of the articles listed above is missing please contact your supplier immediately.

## 4 Installation and commissioning

Environmental conditions at the workplace chosen for the printer must meet the conditions stated below:

- Temperature: 5°C – 35°C
- Humidity: 10 – 80 % (excl. condensation)

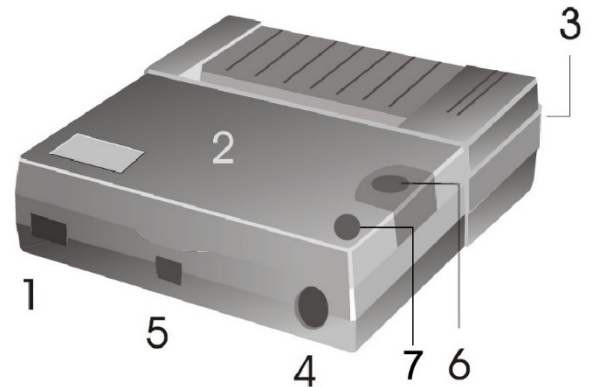
Take notice of the following as regards to the site of operation:

- Dust and humidity free
- Do not place printer next to powerful sources of heat
- Do not place the device within range of strong electric, magnetic, electromagnetic impulse fields or planes that collect electrostatic charge.
- Do not expose printer to direct sunlight or impacts.

Power is supplied via the external mains adapter.  
The stated voltage value must be the same as the local voltage.  
Only use original KERN mains adapters.  
Using other makes requires consent by KERN.

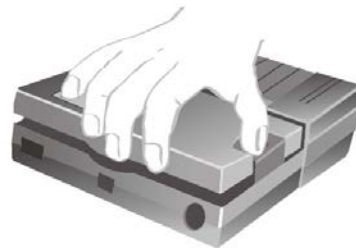
## 5 Printer parts

- 1 – ON/OFF switch
- 2 – Cover of paper compartment
- 3 – LED display ON/OFF
- 4 – Interface for connection to weighing balance
- 5 – Interface for printer supply
- 6 – Feed button
- 7 – Functional button

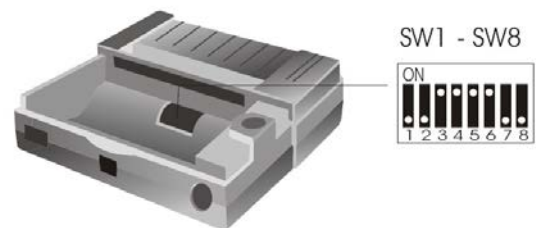


## 6 Preparing your printer for operation

Remove the cover from the paper compartment



Set the micro switches



English

The micro switches are used to set the operating mode for the printer.

	1200	2400	4800	9600
<b>SW1</b>	ON	OFF	ON	OFF
<b>SW2</b>	ON	ON	OFF	OFF
<b>SW3</b>	<b>SW4</b>	<b>FORMAT</b>		
OFF	OFF	8 bits – no parity		
ON	OFF	7 bits – odd parity		
OFF	ON	7 bits – even parity		
ON	ON	7 bits – ignore parity		
<b>SW5</b>	ON	Summer time		
	OFF	Winter time		
<b>SW6</b>	ON	Statistics ON		
	OFF	Statistics OFF		
Language	POL.	GER.	ENG.	FRA.
<b>SW7</b>	ON	OFF	ON	OFF
<b>SW8</b>	ON	ON	OFF	OFF



Changes to the settings for the micro switches must be made with the power supply turned off.  
The changes are taken over when started-up again.

### **Connecting the cables:**

There are two interfaces at the back wall of the housing:

Terminal printer cable

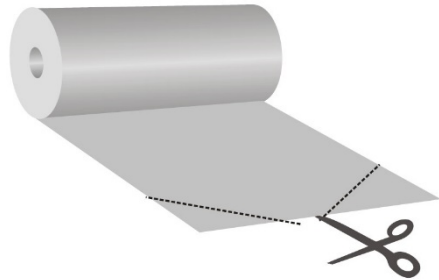
Terminal power supply unit



Always use KERN accessories and weighing balances when working with your printer. Disconnect the printer from the mains voltage before connecting the cable to the printer.

## Preparing the paper:

- ⇒ Fold over one end of the paper before inserting it into the printer



## Inserting the paper

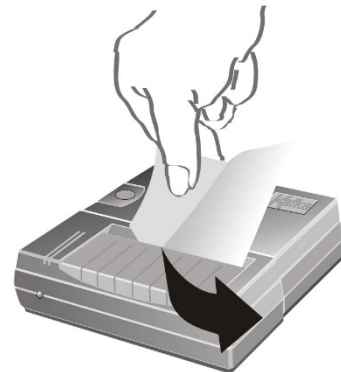
- ⇒ Insert the folded-over end of the paper into the mechanism
- ⇒ Turning on the printer supply
- ⇒ Press and hold the FEED key until the paper emerges from the outlet slot of the mechanism



English

## Tearing off paper

- ⇒ Pull the printout across the direction of printout that it rests on the cutter bar of the printer housing



Do not pull printout upwards.

## 7 Operating elements

After the power supply unit has been connected to the printer and the mains, and after the

ON/OFF switch of the printer has been switched to "ON" position, the red indicator for the power supply will light up.

This indicator also signals that the printer is ready for operation.

## 8 Start-up

- ⇒ On start-up press the FEED key; printer carries out self-test and parameters will be printed.  
Red LED is lit up, printer is ready for operation.
- ⇒ Press "FEED" key: Switch numerator on or off, when statistics function is „ON“
- ⇒ Press and hold "FEED" button: Paper transport.
- ⇒ Press "FEED" button: Switch date and time on or off, when statistics function is „OFF“



## 9 Statistics function

To create statistics, the numerator must be switched on.  
After having processed several weighings, statistics will be printed by pressing the functional button:

Example Numerator ON:

Numerator ON	
001:	0.366 g
002:	0.363 g
003:	0.357 g
004:	0.354 g
18/05/10	15:01
n	004
$\Sigma$	00001.44 g
$\bar{x}$	00000.31 g
$\sigma^{n-1}$	00000.14
$\sigma^n$	00000.44
Min	00000.00 g
Max	00000.36 g
R	00000.36 g

Explication:

n	Number of test results
$\Sigma$	Sum of all test results
$\bar{x}$	Mean value of all test results
$\sigma^{n-1}$	Standard deviation of the basic totality
$\sigma^n$	Standard deviation of a random sample
Min	Minimum value of the basic totality
Max	Maximum value of the basic totality
R	Span of the basic totality (maximum value – minimum value)

### 9.1 Zeroing of statistics counter

Pushing and holding the red function button pressed causes zeroing of the statistics counter.

## 9.2 Arithmetic mean value of the basic totality:

$$\bar{X} = \frac{x_1 + x_2 + \dots + x_n}{n}$$

## 9.3 Standard deviation of the basic totality

$$\sigma_n = \sqrt{\frac{\sum x_1^2 - \frac{1}{n}(\sum x_1)^2}{n}}$$

## 9.4 Standard deviation of a random sample

$$\sigma_{n-1} = \sqrt{\frac{\sum x_1^2 - \frac{1}{n}(\sum x_1)^2}{n-1}}$$

## 10 GLP log

To create a GLP log, press the functional button when switching on.  
The following log is created and can be completed hand-written:

### Documentation of Adjustment (GLP)

Date: 18/05/10

Hour: 14:26

Balance

Manufacturer: \_\_\_\_\_

Model: \_\_\_\_\_

Serial no.: \_\_\_\_\_

ID: \_\_\_\_\_

### Adjustment weight

external

internal

Serial no.: \_\_\_\_\_

Rated value: \_\_\_\_\_

Class: \_\_\_\_\_

Adjustment successful:

yes

no

Auditor: \_\_\_\_\_

Signature: \_\_\_\_\_

## 11 Storage conditions and use of thermal paper

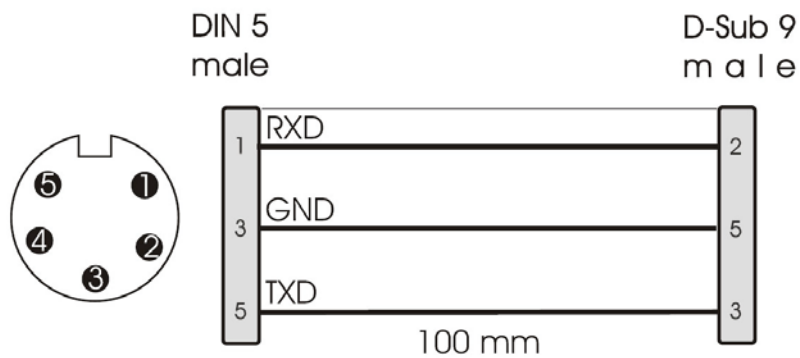
Long-term usability of thermal paper is achieved by correct storage.

- i** Storage:
- Dark storage location (no direct sunlight)
  - Maximum relative air humidity 65%
  - Maximum temperature 25°C

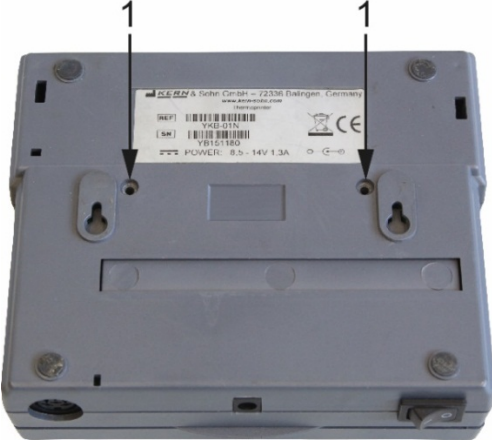
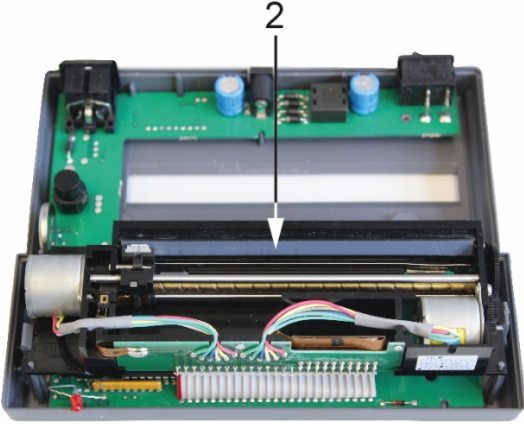

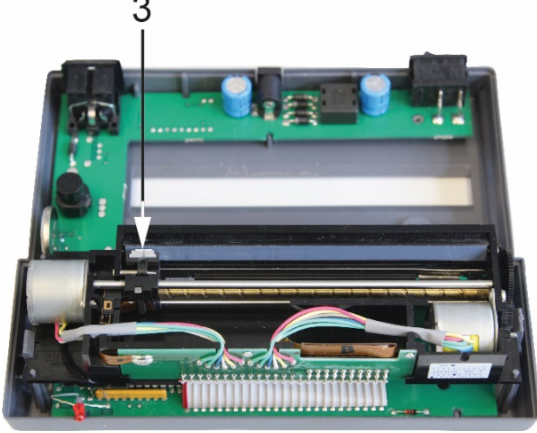
Always store printed paper under the following conditions:

- i**
- Do not expose to direct sunlight or intensive room lights
  - Avoid contact with alcohol, solvents or similar substances (e. g. adhesives),
  - Do not store inside PVC pockets
  - Storage temperature < 25°C.

## 12 Printer cable



# 13 Cleaning

	1. Remove the screws at the printer's back.
	
	2. The thermal head should be cleaned carefully with isopropyl alcohol.
	
	3. When cleaning, take care not to move the printing head.
<p><b>CAUTION</b></p> 	

## 14 Instant help

Symptom	Remedy
The supply indicator is not lit up.	Check whether the power supply unit is connected to the printer and to the mains.
Paper does not emerge.	Check whether the paper has been inserted correctly, whether the input slot of the mechanism is free of obstructions
Paper leaves printer without print:	Check whether the paper has been inserted with its thermo-sensitive side facing the printer head, whether the SW switches are set correctly.
No printing is taking place and paper does not emerge.	Check whether the connecting cable is connected at both ends, whether the printer prints during the self-test, whether the SW switches are set correctly.
Wrong characters are printed	Check whether SW switches are set correctly.
Printout is blurred	<ul style="list-style-type: none"><li>• Check whether operating temperature exceeds allowed value, whether the paper used is recommended by the manufacturer.</li><li>• Follow the guidelines in chapter 13 "Cleaning".</li></ul>

If you are unable to remedy the error, please contact your supplier.