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Operating instructions Statistics printer

KERN YKS-01

Version 1.0
05/2010
GB

YKS-01-BA-e-1010

GB

KERN YKS-01

Version 1.0 05/2010

Operating Manual

Statistics printer

Table of Contents

English

Printer YKS-01 is a standard thermal printer

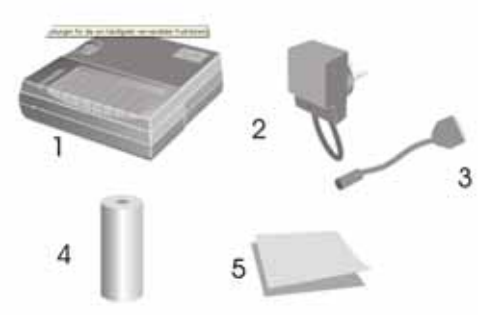
1 Technical Data

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

2 Unpacking

Delivery includes:

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



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

3 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)

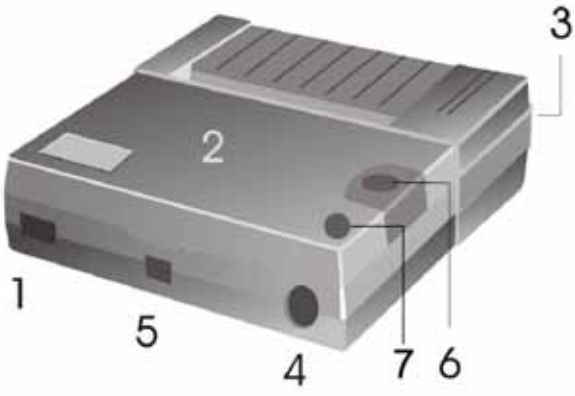
Take notice of the following as regards to the site of operation:

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.

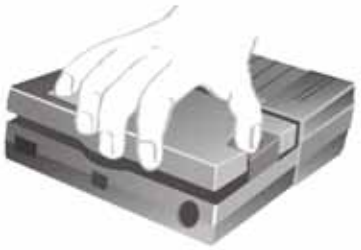
4 Printer parts

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



5 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**
SW1	ON	OFF	ON	OFF
SW2	ON	ON	OFF	OFF
SW3 OFF ON OFF ON	**SW4** OFF OFF ON ON	**FORMAT** 8 bits – no parity 7 bits – odd parity 7 bits – even parity 7 bits – ignore parity		
SW5	ON	Summer time		
	OFF	Winter time		
SW6	ON	Statistics ON		
	OFF	Statistics OFF		
Language **SW7** **SW8**	POL. ON ON	GER. OFF ON	ENG. ON OFF	FRA. OFF OFF

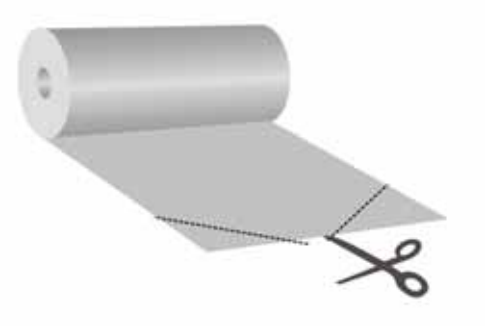
Changes to the settings for the micro switches must be made with the power supply turned off.
The changes are taken over when started-up again.

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

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.

6 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.

7 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 „ON“

8 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
$\sum$	00001.44 g
$\overline{x}$	00000.31 g
σ^{n-1}	00000.14
σ^{n}	00000.44
Min	00000.00 g
Max	00000.36 g
R	00000.36 g

Explication:

n	Number of test results
$\sum$	Sum of all test results
$\overline{x}$	Mean value of all test results
σ^{n-1}	Standard deviation of the basic totality
σ^{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)

8.1 Arithmetic mean value of the basic totality:

$$\overline{X} = \frac{x_1 + x_2 + ... + x_n}{n}$$

8.2 Standard deviation of the basic totality

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

8.3 Standard deviation of a random sample

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

English

9 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: _____

10 Storage conditions and use of thermal paper

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

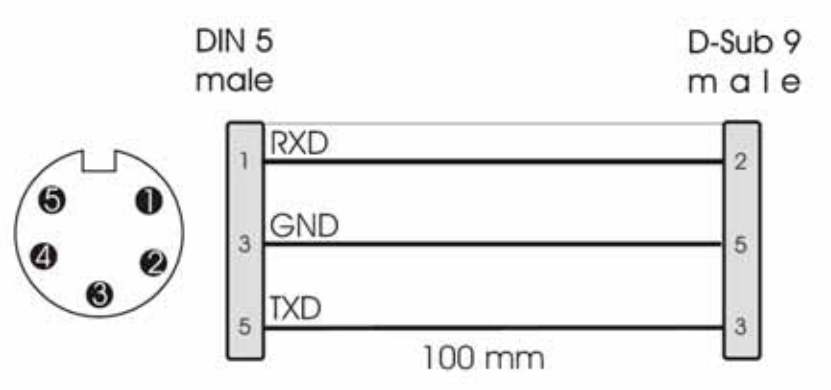
i	Storage: - Dark storage location (no direct sunlight) - Maximum relative air humidity 65% - Maximum temperature 25°C

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 < 25ºC.

English

11 Printer cable



12 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	Check whether operating temperature exceeds allowed value, whether the paper used is recommended by the manufacturer.

English

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