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# KERN YKT-01

**Version 1.4 09/05**



3756906

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# 1. Introduction

Prior to first use of the Statistic Printer YKT-01, we recommend that you read these operating instructions very carefully.

The statistics printer YKT-01 is fitted with a thermal printing unit.
It has an interface for connecting electronic scales.

**Range of application**
Incoming and outgoing inspection, production, quality assurance

**Specifications**
- Up to 999 measured values can be stored (Logger-function)
- Two-line, alphanumerical display à 16 characters to display settings or error and status messages in dialogue mode
- Operation with mains supply or with optional 6 Standard accumulator batteries AA 1,2 V (accumulator batteries cannot be loaded via the delivered mains supply)
- High speed print, print-out on thermopaper
- No loss of data in case of voltage loss
- Possibility as Interface to RS 232C
- multilingual (German/French/English)

**Safety and general notes**
- Make sure that the electrical connection data prescribed for the plug-in charger are observed.
- Connect and disconnect data in-and output only when the printer is switched off or disconnected.
- Protect the instrument against humidity, dust and aggressive media.
  Keep the printer mechanism clean from dust by wiping it with a dry cloth from time to time.
- No connection of data cables with a length of more than 3 m.
- In the event of optional use of accumulators, dispose of used accumulators in accordance with regulations.
- Storage temperature: -10 °C to +50 °C
- Operating temperature: +5 °C to +40 °C

**The Statistic Printer YKT -01 is in comformity with EU-Standards 89/336/EWG concerning electromagnetic compatibility and the directive on low voltage 73/23/EWG.**

Should you have any questions regarding the instrument, please do not hesitate to contact us.

# 2. Technical Data, Standard accessories, Denominations

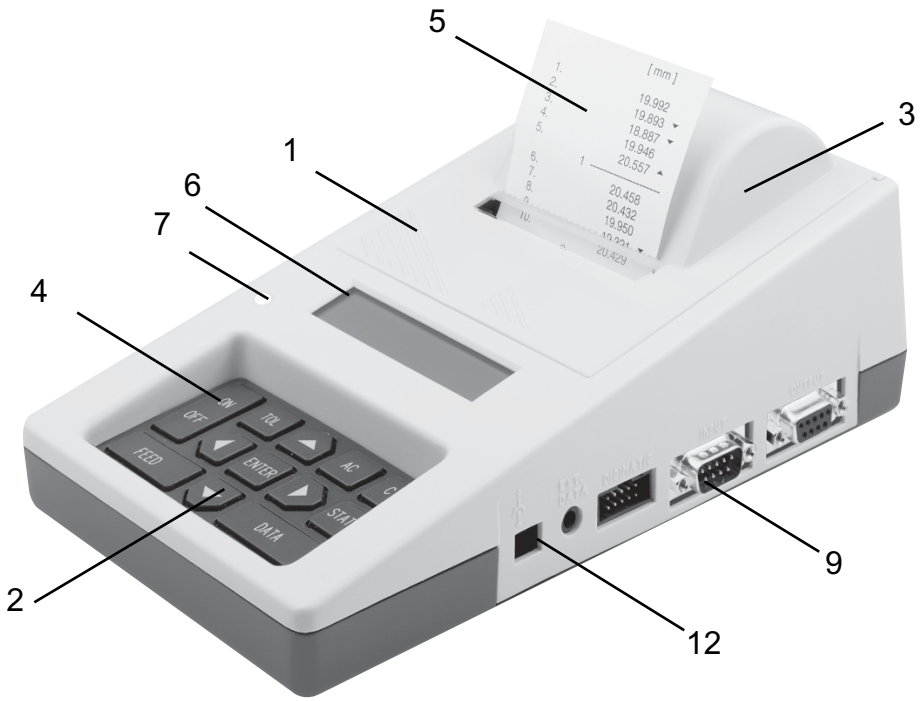
## 2.1 Technical Data

| | |
|---|---|
| Measured values max. | 999 |
| Characters per line | 24 |
| Paper width | 58 mm |
| LxWxH | 215 x 116 x 85 mm |
| Battery powered by 1100 mAh | > 7000 printed lines |
| Datalogger by accu. operation | ca. 24 hours |
| Protection class | IP 40 |
| Total weight incl. accu * | 600 g |

## 2.2 Scope of delivery

**YKT -01 Statistic printer** in plastic case
complete with:
Mains supply adapter
Paper rolls
Operating Instructions
**UK-Adapter**

## 2.3 Denominations




**1** Housing
**2** Control panel
**3** Printer cover
**4** ON/OFF-switch
**5** Printout
**6** Alphanumerical display
**7** Tolerance-LED
**8** not proved by documents
**9** Data-input from measuring instrument RS 232 (INPUT)
**10** not proved by documents
**11** not proved by documents
**12** Connector to mains power supply
**13** Battery compartment cover

# 3. Putting into operation

### 3.1 Power supply

Connect the statistics printer with the supplied mains power adapter to a mains power source or insert 6 standard batteries AA 1,2 V.

#### 3.1.1 Mains power supply

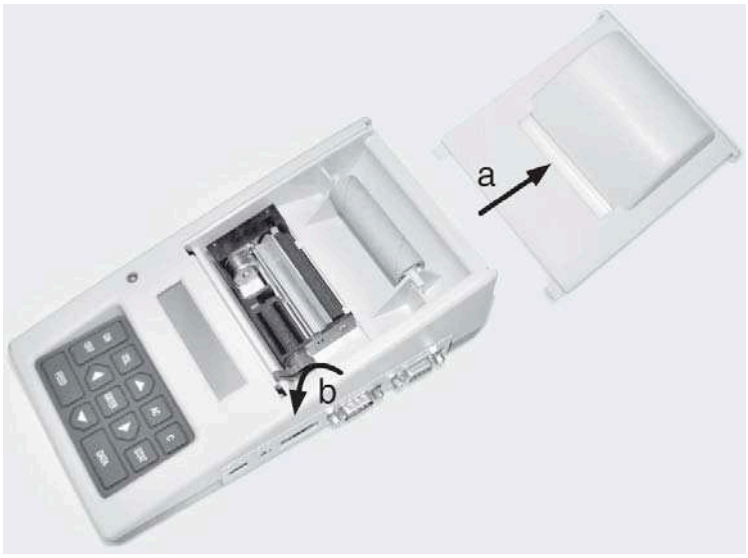
- Connect the mains power adapter to the mains (observe the voltage) and with the 12 pin connector socket.
- Only use the supplied mains power adapter.

#### 3.1.2 Battery power supply

- Remove cover 14 observing the arrow direction on the rear side of the instrument. At the same time this cover closes the battery compartment:
- Insert batteries, check the polarity on the underside of the instrument.
- Replace the cover.

### 3.2 Loading the paper roll

- Switch off instrument.
- Move printer cover 3 backwards (a) and take it off.
- Remove the plastic shaft and guide the new paper roll core onto it (when changing paper: Take out plastic shaft and remove the old roll core and if necessary any paper parts that have remained in the printer).




**Manual Feed**

- Open clamp (b) in the printer.
- Place the new paper roll on the table behind the printer and unwind ca. 15 cm.
  **Note:** Unwind the paper from the underside (see picture below), the paper end must be a straight, clean-cut.
- Switch the unit on. On the display appears in the Start menu the following command „Load paper!“

- Guide paper through the underside of the paper feed (c) until the paper appears.
- Arrange paper, ensuring it is straight.
- Close the clamp (d).
- Insert the paper roll on the roller locator in the printer.
- Pressing the FEED key enables a paper feed, this depends on how long this key is pressed. The paper end should protrude 3-5 cm over the printer head.
- Slide the end of the paper roll through the slot in the printer cover (e) and replace the printer cover onto the housing (f).
- The Statistics Printer YKT-01 is now ready to print.


**Automatic Paper feed**

- Clamp (d) of the printer is closed.
- Place the new paper roll on the table behind the printer and unwind ca. 15 cm.
- Switch the unit on. On the display appears in the Start menu the following command „Load paper!“.
- Guide paper through the underside of the paper feed (c) until the paper is automaticlly pulled through.
- Open clamp (b) of the printer and arrange the paper.
- Close clamp (d).
- Insert the paper roll on the roller locator in the printer.
- Slide the end of the paper roll through the slot in the printer cover (e) and replace the printer cover onto the housing (f).
- The Statistics Printer YKT-01 is now ready to print.

## 4. First steps

=> Establish a power supply, see Chapter 3.1

=> Loading a paper roll, see Chapter 3.2

=> Basic set-up
Setting up of Language, Measuring unit and Date/Time

Press **ENTER** following appears in the display: e.g

```
Protocol
                Statistics
```

Press ◀ and in the display appears

```
LCD-contrast
                        9
```

Press ◀ again, in the display appears

```
Language
                  English
```

With ▲ or ▼ the required language can be selected.

Subsequently press ◀ in the display appears

```
Meas. unit
                       mg
```

With ▲ or ▼ select the desired weighing unit (mg/g).

Subsequently press ◀ in the display appears

```
Date, Time
(Stat)
```

Press **STAT** to set the data and time.

In the display the cursor flashes on the weekday field e.g. Mo

```
          Mo 00.00.00
             00:00:00
```

With ▲ or ▼ the current day can be selected.

With ▶ the cursor moves to the next input position (Day, Month, Year, Hour, Minute, Second)

With ▲ or ▼ the current date and time can be set.

With **ENTER** the settings are confirmed and the basic settings are concluded.

=> Select Interface:

Press **ENTER** in the display appears

| Interface |
| --- |
| 440/572/C/D/KB |

the selected scale model

Press ▼ several times until in the display appears
The selected scale model appears.

| Interface |
| --- |
| xxx |

Conclude with **ENTER** to confirm selection

=> Receive and print a measured value:

With the key **DATA** on the YKT-01 or the function key on the scale the measuring values are transferred to the printer.

=> Delete measured value:

With **C** or **AC** key a single or all values will be deleted.

Press **AC** in the display appears

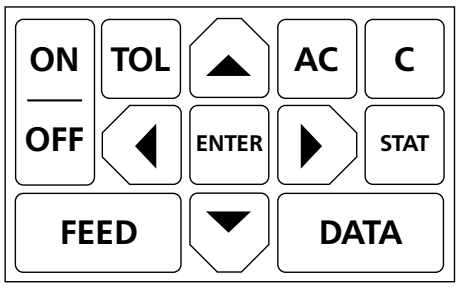
| Delete all meas. values? no |
| --- |

With ▲ or ▼ select yes or no and confirm with **ENTER**

Of course the YKT-01 Statistics Printer offers a wide range of possibilities and ranges to optimize and support your measuring and quality requirements. A detailed explanation and reference guide can be found on the following pages.

# 5. Operation mode

**Keyboard**




Long pressing: > 1 sec., short pressing: < 1 sec.

### 5.1 **Switching On/Off** (ON/OFF)

Switching ON and OFF, supply voltage display

**ON**
**OFF**

**5.1.1 Switching on** (long pressing)**.**
The following appears in the display after switching on:

```
YKT-01          V 1.4
    Welcome
```

If there is no previous measuring series, then after 2 seconds appears in display:

```
          Fr 12.11.01
             10:13:40
```

If there is an existing measurement series, then after switching on the measuring value with the highest measuring value number will appear.

```
No.17          12.345
                    mg
```

After receiving a measuring value this remains in the display.

**5.1.2 Switching off** (short pressing):

```
          OFF
```

**5.1.3 Displaying the supply voltage** (long pressing, hold until in the display appears):

```
Supply voltage 7.5V
```

### 5.2 **Paper feed** (FEED)

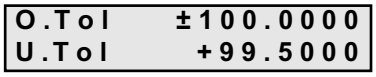
**FEED**

short pressing: feeds 1 row
long pressing: continuous feed until the key is released

### 5.3 Tolerance display/changing tolerance value (TOL)

#### 5.3.1 Displaying tolerance

TOL — short pressing: Current tolerances will appear in the display. The cursor will appear on the sign of the Upper Tolerance.




**Attention:**
The input or changing of a tolerance value is only possible when the measuring series is deleted with the **AC** key. Within a series of measurements, tolerance values are only shown on the display, manifested by the absence of a flashing cursor.

#### 5.3.2 Inputting the tolerance

With ◀ ▶ keys can the selected position be edited

With ▲ ▼ keys the selected position be can edited. Valid entries are the numbers 0 to 9 and the signs " + ", " - " and " . "

Note:

- The default value is zero.
- The maximim number of positions including sign and decimal point is 10.
- This may only include 6 digits after the decimal point.
- It is permissable to enter any character of your choice in the 10 available positions.
- Positions remaining vacant between the numerals will be filled in during saving by moving them to the right.
- After saving, the numerals will be right aligned

With C key the character where the flashing cursor is positoned can be deleted.

With AC can the whole figure be deleted and the cursor will return to the input field.

With ENTER key it is possible to alternate between the upper and lower tolerance values.

With TOL is the input of tolerance value concluded, the tolerance value is saved and the input menu can be exited.

### 5.4 Transferring measuring values

DATA

Measuring values are accepted either using the function(print) key (data transfer) at the scales or using the DATA key on the YKT -01. They will then be shown on the display and also printed if „print measuring value“ has been activated.

```
No.17        12.345
                  mg
```

### 5.5 Delete a measured value

#### 5.5.1 Delete an individual measured value

Whether one or several values have been received, with C the present value shown in the display can be deleted.

```
No.17        12.345
deleted           mg
```

An acoustic signal is issued. If this is the last measuring value, it will be marked by a strike through on the printout. When there are 6 spaces between the last measured value and the actual position of the paper, the value can no longer be struck through and will be treated as an old measured value.

#### 5.5.2 Delete an old measured value

If required to delete an old measured value, use ▲ or ▼ to display the value and to delete with C .

As the returnpaper feed is only able to execute one recording step back, only the last printed value will be struck through. Subsequently the actual printing item will be displayed with e.g. **“no. 10 cancelled!”**.
If, starting with the highest reference number of the measuring values, always the penultimate reference number is cleared, this number will become vacant and allocated to the next accepted measuring value

If the cancelled value is not the one with the highest measuring value reference number then this number will remain in use. When the value is shown on the display it will have the remark „deleted“

```
No.10        12.345
deleted           mg
```

The deleted values are not considered in the number of measuring values or in the statistical evaluation.

Deleted values can be restored by pressing C (press longer than 1 sec.).

Therefore the message e.g. **„No.10 restored“ is printed.**
Generally an acoustic signal is issued.
If no deleted value is selected, this function is not possible.

### 5.5.3 Deleting a measuring value (all measured values)

Press, **AC** in the display appears

```
Delete all meas.
values?          no
```

By pressing **ENTER** it is possible to abandon this menu without deleting any of the measuring values

Select ▼ or with ▲

```
Delete all meas.
values?          yes
```

and confirm with **ENTER**

### 5.6 Calculate statistics

Via the key **STAT** the statistics for the present values be calculated.

The reports:

- **Statistics**
- **Statistics with histogram**
- **Sample chart** can be selected.

For selection refer to **Setting modes**, chapter 6

### 5.7 Leafing through a measuring list

With the cursor keys ▲ ▼ it is possible to leaf back and forth within the list.

### 5.8 Printing a measuring list

The current measuring list can be printed as often as required.

Via the key **ENTER** the setting up mode is activated. With ▶ leaf through until appears.

```
Print meas. list
              (Data)
```

The current measuring sequence will be printed with **DATA**

During a print-out the task, with **ON/OFF** can be switched off and with **FEED** the task is discontinued.

Return with **ENTER** to the **Operating mode**.

### 5.9 Documenting the adjustment (GLP)

The YKT-01 is able to produce a GLP adjustment report.

Keep the **STAT** key pressed for approx. 3 seconds.

The following report will be printed and can be completed by hand.

Documentation of
Adjustment (GLP)

Date: Time:
_____ _____

Balance
Manufacturer:_____
Model: _____
Serial no.: _____
ID: _____

Adjustment weight

☐ external ☐ internal

Serial no.: _____
Rated value: _____
Class: _____
_____
Adjustment successful:

☐ yes ☐ no
_____

Auditor: _____

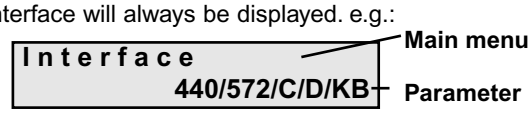
Signature: _____

# 6. Setting mode

## 6.1 Menu guide

With **ENTER** you get from the working mode into the setup mode.

The currently selected interface will always be displayed. e.g.:




With ◀ ▶ the **main menu** is selected

With ▲ ▼ can the related parameters of the **main menu** be selected.

With **ENTER** can the **setting mode** at any point be abandoned.

**Attention:**
The current settings are confirmed with **ENTER** resp. accepted once there has been a change to the next menu item.

At any point the setting mode is switched off and the new settings are saved.

## 6.2 Overview: Setting mode

| Main menu | Parameter menu | Chapter | Edit parameter | Chapter |
|---|---|---|---|---|
| ◀ ▶ | ▼ ▲ | | STAT | |
| Report | Statistics<br>Stat. / Histogr.<br>Sample chart | 6.3 | | |
| Print value | yes<br>no | 6.4 | | |
| Send value | | | not documented | |
| Report header | yes<br>no | 6.6 | | |
| Sample size | 1 . . . 25 | 6.7 | | |
| Auto. Data | no<br>yes | 6.8 | Edit time interval | 7.2 |
| Print series | | 5.8 | | |
| Send series | | | not documented | |
| ASCII – Printer | | 6.9 | | |
| Acoust. Signal | On<br>Off | 6.10 | | |
| Interface | 440/572/C/D/KB<br>770/GS/GJ<br>AR/PR<br><47x/EG/EW><br><AB><br><ITx/FTx> | 6.11 | | |
| Full indication | yes<br>no | 6.5 | | |
| Date, Time | | 6.12 | Edit date and time | 7.4 |
| Edit weighing unit | mg<br>g<br>kg<br>t<br>lb<br>ct | 6.13 | Edit weighing unit | 7.3 |
| Language | German<br>English<br>French | 6.14 | | |
| LCD-Contrast | 0 . . . 16 | 6.15 | | |

### 6.3 Protocol

The desired protocol can be selected.
After having made the selection the following appears on the display:

**Protocol**
**Statistics**

With ▲ ▼

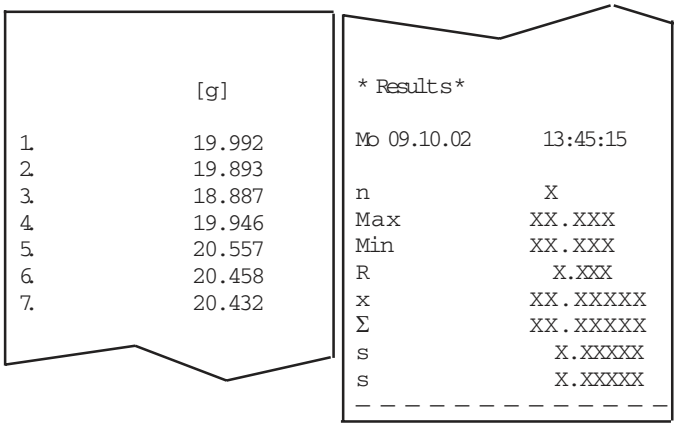
it is possible to switch to

**Protocol**
**Stat./Histogr.**

or to

**Protocol**
**Sample chart**

#### 6.3.1 Statistics



### 6.3.2 Statistics with histogram (Stat./Histogr.)

```
UT              20.500
LT              19.900
Subgr.size       5
- - - - - - - - - - - -
                [g]

1.              19.992
2.              19.893  ▶
3.              18.887  u
4.              19.946
5.              20.557  t
                1   ----
6.              20.458
7.              20.432
8.              19.950
9.              19.321  u
10.             20.429
                2   ----
11.             19.956

* Results*

Mo 09.10.02      13:45:15

n                X
Max             XX.XXX
Min             XX.XXX
R                X.XXX
x               XX.XXXXX
Σ               XX.XXXXX
s                 X.XXXXX
s                 X.XXXXX
> UT            X
< LT            X
Def. %          X
C m             X.XXX
Cmk             X.XXX
Cp              X.XXX
Cpk             X.XXX
Sam.size         5
* Histogram *

UT              20.500
LT              19.900
Classes         10

Class limits:
A               XX.XXX to
B               XX.XXX to
C               XX.XXX to
D               XX.XXX to
E               XX.XXX to
F               XX.XXX to
G               XX.XXX to
H               XX.XXX to
I               XX.XXX to
J               XX.XXX to
                XX.XXX

UT    X
- - - - - - - - - - -
A               X
B               X
C               X
D               X
E               X
F               X
G               X
H               X
I               X
J               X
- - - - - - - - - - -
LT    X
```

### 6.3.3 Sample chart

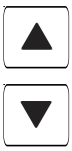
```
UT              20.500
LT              19.900
Sam.size         5
- - - - - - - - - - - -
[g]
                LT     UT
+XXX.XXXX      h   :    |
+XXX.XXXX      | h :    |
+XXX.XXXX      |  h:    |
+XXX.XXXX      |    :h  |
+XXX.XXXX      |  h:    |
               1   ----

+XXX.XXXX      |    :  ▶
+XXX.XXXX      |    :•  |
+XXX.XXXX      |  •:    |
+XXX.XXXX      |  •:    |
+XXX.XXXX      ◀    :   |
               2   ----
+XXX.XXXX      |•   :   |
+XXX.XXXX      |  •:    |
+XXX.XXXX      |    :•  |

* Results*

Mo 09.10.02      13:45:15
```

```
n                X
Max             XX.XXX
Min             XX.XXX
R                X.XXX
x               XX.XXXXX
Σ               XX.XXXXX
σ                 X.XXXXX
s                 X.XXXXX
> UT            X
< LT            X
Def. %          X
C m             X.XXX
Cmk             X.XXX
Cp              X.XXX
Cpk             X.XXX
Sam.size         5

* Histogram *

UT              20.500
LT              19.900
Classes         10

Class limits:
A               XX.XXX to
B               XX.XXX to
C               XX.XXX to
D               XX.XXX to
E               XX.XXX to
F               XX.XXX to
G               XX.XXX to
H               XX.XXX to
I               XX.XXX to
J               XX.XXX to
                XX.XXX

UT    X
- - - - - - - - - - - -
-
A               X
B               X
C               X
D               X
E               X
F               X
G               X
H               X
I               X
J               X
- - - - - - - - - - - -
-
LT    X
```

### 6.4 Print values

After having made the selection the following appears on the display:

| Print values |
| --- |
| yes |

With  can

| Print values |
| --- |
| no |

be selected.

When measurement list are accepted an acoustic signal will be issued.

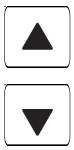
### 6.5 Full indication

After having made the selection the following appears on the display:

| Full indication |
| --- |
| yes |

The entire display is recorded, however special characters (e.g. verification labelling, /...) are left out; the entire weighing value is printed out. For Example:

Display 0.0017/2 Printout 0.00172

With  can

| Full indication |
| --- |
| no |

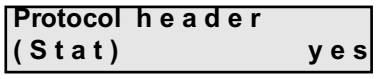
be selected.

Display values are only recorded up to the special characters. Any additional values stated after the special characters will be left out. For Example:

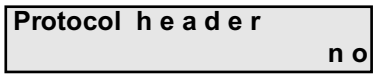
Display 0.0017/2 Printout 0.0017

### 6.6 Protocol header

Once selected the following will appear on the display:




With ▲ ▼ can




be selected.

### 6.7 Subgroup size (sam. size)

Once selected the following will appear on the display:


With ▲ ▼ the value can be changed from 1 to 25.

### 6.8 Auto Data (Time-controlled automatic data transfer )

In regular time intervals the measured values can automatically be transferred.
After having made the selection the following appears on the display:


With ▲ ▼ can


be selected.

With **STAT** can the parameter time interval be edited, see chapter 7.2

With **ENTER** the following appears on the display:


With **DATA** the function is activated.

With **ENTER** the time-controlled automatic data transfer is terminated

and goes back to

```
Auto. Data
(Stat)          yes
```

With ▲ ▼ can

```
Auto. Data
                 no
```

be selected and

with **ENTER** can be terminated the time-controlled automatic data transfer function.

**Note:**
During the time-controlled automatic data transfer the following keys are locked:
TOL., AC, C, STAT and the cursor keys.
The keys that remain operational are: ON/OFF, ENTER, FEED and DATA.

### 6.9 ASCII – Printer

After having made the selection the following appears on the display:

```
  ASCII - Printer
(Stat)        (Data)
```

With **DATA** one is taken to the ASCII receiving mode:

```
_
```

The cursor flashes at the top left hand corner position of the display. The commands Xon / Xoff are active. Xon is sent after Xoff has been sent. The memory size amounts to 50 Byte. A maximum of 32 characters can be seen in the display. A received CRLF returns the cursor to the top left hand corner positon.

With **AC** can the whole display be deleted.

All possible characters will be printed.

With **ENTER** returns one to the following display:

```
  ASCII - Printer
(Stat)        (Data)
```

### 6.10 Acoustic signal

Here the acoustic signal can for all functions be switched on or off.
There are 3 acoustic signals available:

1 x short for measuring value transfer
1 x long for deleting measuring value/measuring list
3 x short for **Error messages**

After having made the selection the following appears on the display:

With ▲ ▼ can

| Acoustic Signal on |
|---|

| Acoustic Signal off |
|---|

be selected.

### 6.11 Interface

The desired interface can be selected. After having made the selection the following appears on the display:

| Interface 440/572/C/DKB |
|---|

With ▲ ▼ can be switched.

The interfaces referred to as: - 440/572/C/D/KB,
- 770/GS/GJ
- AR/PR

are programmed with fixed parameters. For suitable hand measuring instruments and data cables see Appendix B.

The Interfaces referred to as: - < 47x/EG/EW >
- < ABS/ABJ>
- < ITx/FTx >

have been assigned the appropriate parameters. For suitable hand measuring instruments and data cables see Appendix B.

### 6.12 Date, Time

The data and time can be set here.

After having made the selection the following appears on the display:

| Date, Time (Stat) |
|---|

With **STAT** **Date** and **Time can be edited**, see chapter 7.2

### 6.13 Measuring unit

The desired measuring unit can be selected.
After having made the selection the following appears on the display:

With ▲ ▼

| | | |
|---|---|---|
| | Meas. unit<br>mg | |
| can be switched to: | Meas. unit<br>g | (kg,t,ct,lb) |
| or: | Meas. unit<br>(Stat) <xxxx> | |
| or: | Meas. unit<br>_ _ _ _ | |

Meas. unit „——„ means that the measuring value will be issued without measuring unit

With **STAT** the **Weight unit** can be freely **edited**, see chapter 7.3

**Attention:** If the measuring unit is changed, both tolerance limits are automatically set to zero **without Error message**.

### 6.14 Language

Ther desired language can be selected.

After having made the selection the following appears on the display:

With ▲ ▼

| | |
|---|---|
| | Language<br>Deutsch |
| can be switched to: | Language<br>English |
| or : | Language<br>Francais |

### 6.15 LCD-contrast

The contrast of the display has 17 levels and can be altered to the personal requirements of the user. After having made the selection the following appears on the display:

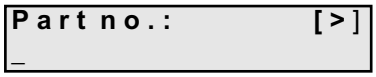
LCD-contrast
9

With ▲ ▼ the LCD-contrast can be altered from 0 to 16.

# 7. Edit parameter

## 7.1 Editor function

The display shows in the right hand corner the current editor mode.




With **DATA** it can be switched as follows:

[>] refers to upper case ( A to Z )

[<] refers to lower case ( a to z and ä, ö, ü, ß)

[1] refers to numbers ( 0 to 9 )

[*] refers to special characters ( $20_H$ to $2F_H$ ; $3A_H$ to $40_H$ ; $E6_H$)

[#] refers to following control characters:

- ┘ → CR
- ┌ → LF
- ▮ → End of string
- □ → 0,5 sec. pause

The cursor flashes at the first possible position that can be edited.

With ◀ ▶ the cursor can be moved to the position to be edited and

with ▲ ▼ the appropriate position can be edited.

A longer pressing of the keys ▲ ▼ enables a quick preview of the characters in the respective editor mode.

With **C** the edited position can be deleted. (spaces are entered)

With **AC** the whole display can be deleted. (spaces are entered)

### 7.2 Edit time interval

After having made the selection the following appears on the display:

```
Auto. Data
(Stat)          yes
```

The key **STAT** allows the selected parameter to be edited.

```
Auto. Data
10 Sec
```

Using the ▲ ▼ keys this parameter will be altered.

.

With ▶ the cursor is moved under the unit and

with ▲ ▼ modified

Possible entries: 0...59 sec
0...59 min
0...99 hr

With **ENTER** one returns to the **Main menu**

```
Auto. Data
(Stat)          yes
```

### 7.3 Edit weight unit

After having made the selection the following appears on the display:


With **STAT** the **Meas. unit** can be freely **edited**.


With ◀ ▶ the cursor can be moved to the next position

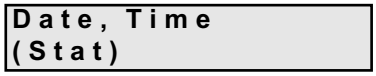
and with ▲ ▼ the appropriate position can be edited.

With **ENTER** one accepts the setting and returns to the **Main menu** .

**Attention:** If the weight unit is changed, both tolerance limits are automatically set to zero **without Error message.**

### 7.4 Edit Date, Time

After having made the selection the following appears on the display:




With **STAT** can **Date** and **Time** be **edited**.


With ◀ ▶ the cursor can be moved to the next position

and with ▲ ▼ the appropriate position can be edited.

With **C** the edited position can be returned to the lowest valid value. e.g.:


With **AC** one can return to the **Main menu** without saving any of the changes.

With **ENTER** the **Main menu** will be left. The changed date and the time will be saved.

# 8. Additional functions

## 8.1 Initialisation of the internal memory

**Caution!**

While switched off press the keys

**AC** + **C** + **DATA**

simultaneously and press

**ON/OFF** to switch on the unit.

The internal memory will be re-initialised with the default values.
The previous settings will be lost !

## 8.2 Printer Self-test

In **operating mode** **ON/OFF** keep pressed until

```
Supply voltage
7.5 V
```

appears.

Following this press **FEED** for a short period.

In the display appears :

```
YKT-01        V 1.4
Self test!
```

The available characters, date, time and voltage are printed, the LED is active and an acoustic signal is sounded.

**Error messages and references**

The task is always shown on the LCD-display.
An error message will be visible for approx. 1 or 2 seconds. An acoustic signal (3 x) is issued. Then the previous display will reappear.
Some error messages which require a decision or signal system failure have to be confirmed.
**Note:** When the acoustic signal is switched off, no error tone will be sounded.

| Message/Error | Cause | Remedy |
|---|---|---|
| **L o a d  p a p e r !** | There is no more paper in the printer. | Load paper (see chapte 3.2) or:<br>With ENTER switch off the printer<br>in order to continue operation without paper.<br>In the display appears:<br>**P r i n t e r**<br>**( E n t e r )  o f f**<br>With ENTER confirm and continue. |

| Message/Error | Cause | Remedy |
|---|---|---|
| Approx. 5 sec:<br>**Voltage too low !**<br>and 1 sec:<br>**OFF** | The operating voltage has dropped below the 6.0 Volt limit. The unit is switched off (Protection against excessive discharge). | Change batteries/accu's or plug in the adapter or exchange the adapter. |
| **Tol.-Error!** | 1. The upper tolerance limit is not bigger as or equal to the lower tolerance limit. | Change the tolerances such that the upper tolerance limit is larger or equal to the lower tolerance limit.<br>Note:<br>While entering the tolerance values, is ON/OFF activated, the device is switched off. Tolerance changes will not be saved.<br><br>Use decimal point or sign only once per value. |
| | 2. Decimal point or prefix exist several times. | Correct to max. 999 values. |
| **Maximum meas.value** | Number of measuring values exceeds 999. | |

| Message/Error | Cause | Remedy |
|---|---|---|
| **Wrong format!** | The measuring value may include a maximum of 6 places after the decimal point. The maximum number of digits including the prefix and the decimal point is 10 digits. If this number is being exceeded, an error message will be displayed. | Check on the measuring instrument that the format conforms to the default. |
| **Wrong meas. unit!** | The measuring unit of the measuring value is selected in the set-up mode. When a measuring instrument however is also sending the measuring unit and this deviates from the selcted unit, an error message will appear. | Change the weighing unit at the YKT. |
| **No meas. value available!** | When a measuring value is being requested with DATA but is not available within 3 sec, this error message appears. | Check the connection to the interface. |
| **No meas. series available!** | 1.There is no measuring sequence available for printing.<br>2. There is no measuring sequence available for sending. | Collect a new series of measuring values |
| **not possible!** | The required action is not possible, e.g. attempting to change the sample size within a started series of measuring will result in an error message. | e.g. abort and delete the series of measurements. Subsequently alter the sample size. |

# Appendix B
**Overview scales and data cables**

| Weighing model series | Interface cables |
|---|---|
| 440,572,CB,DE,DS,KB | 572-926 |
| 470,880,770,GS,GJ,CGB | 70-926 |
| 474,EG,EW * | 474-926* |
| AR,PR | PR-A23 |
| ABS,ABJ | ABS-A05 |
| ITB, ITT, ITS, FTB, FTC* | ITB-A15 |

* Print signal can only be triggered by the scale, a signal request via YKT is not possible

# Appendix C
**Available optional accessories**

Printpaper
1 pack = 5 items *

* not included in the scope of supply

# Appendix D
**Scale configuration**

This additional description contains information on the required settings to be made on the scales in order to enable a communication between scale and printer. Where a scale type is selected under INTERFACE the printer automatically accepts the INTERFACE PARAMETERS with all corresponding data regarding bits per second, data bits, parity, stop bits and reports. At the printer end all settings for a successful data communication between scale and printer have therefore already been made. Only the parameters of the scale software will need to be adjusted.

The following settings should be made (with reference to the model specific operating manual):

| | |
|---|---|
| **Model 470**<br>i F.2<br>81 o.c.3<br>82 b.L.1<br>83 PA 0 (setting does not appear with all devices) | **Model 474**<br>6 IF 1<br>61 o.c.3<br>62 b.L.1<br>7 un.1 |
| **Models 572/440/DE/KB/CB**<br>9600 baud<br>"Autoprint" and "Autoprint PC" off<br>Numerator must be switched off | **Models 770/GS/GJ/CGB**<br>514 612<br>523 622<br>531 641<br>542 721 |
| **Models 822/824/870/880**<br>9600 baud<br>Par E<br>Print ST (single printout of a stable value)<br>Per-ALL off (printout of weighing result only)<br>Prt-dEL off (no print delay)<br>GLP off | **Models EW/EG**<br>6 0. c.3<br>7 b.L.1 |
| **Models PRS/PRJ**<br>9600 baud<br>7 bit<br>Par E<br>1 stop bit | **Models ABS/ABJ**<br>1200 baud<br>8 bit<br>Par N<br>1 stop bit |
| **Model ITx/FTx**<br>2700 baud<br>7 bit<br>Par Even<br>1 stop bit | |

# Appendix E
## Collection of formulas

| | |
|---|---|
| n | : Number of measuring values |
| Max | : Maximum value of populations |
| Min | : Minimum value of populations |
| $\overline{R}$ | : Range of populations (max. value – min. value) |
| $\overline{x}$ | : Mean value of all measuring ranges |
| $\Sigma$ | : Sum of all measuring ranges |
| $\sigma_n$ | : Standard deviation of population |
| $\sigma_{n-1}$ | : Standard deviation of a sample |
| >OT | : Number of excesses; upper tolerance |
| <UT | : Number of excesses; lower tolerance |
| Def. % | : Number of defective parts in % |
| Cm | : Maschine potential |
| Cmk | : Maschine capability index |
| Cp | : Process potential |
| Cpk | : Process capability |
| OT | : Upper limit value OGW (Nominal value + OTol) |
| UT | : Lower limit value UGW (Nominal value – UTol) |
| Stpgröße | : Number of parts sampled |

**Process mean of population**

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

**Standard deviation of population**

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

**Standard deviation of a sample**

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

**Machine Potential**

$$Cm = \frac{OGW - UGW}{6\ \sigma_{n-1}}$$

**Machine Capability Index**

$$Cmk = Minimum\_of\_ \quad \frac{OGW - Xm}{3\ \sigma_{n-1}} \quad \_resp.\_ \frac{Xm - UGW}{3\ \sigma_{n-1}}$$

**Process Potential**

$$Cp = \frac{OGW - UGW}{6\hat{\sigma}}$$

**Process Capability**

$$Cpk = Minimum\_of\_ \quad \frac{OGW - Xm}{3\hat{\sigma}} \quad \_resp.\_ \frac{Xm - UGW}{3\hat{\sigma}}$$

**Estimated value for the standard deviation**

$\hat{\sigma} = \frac{R_m}{d2}$ , whereby “d2” is representing a constant dependent on the sample size (table)

**Mean value for the standard deviation**

$Rm = \frac{R_1 + R_2 + \ldots + R_n}{\mathrm{m}}$ , whereby “m” represents the number of samples

**Range of individual sample**

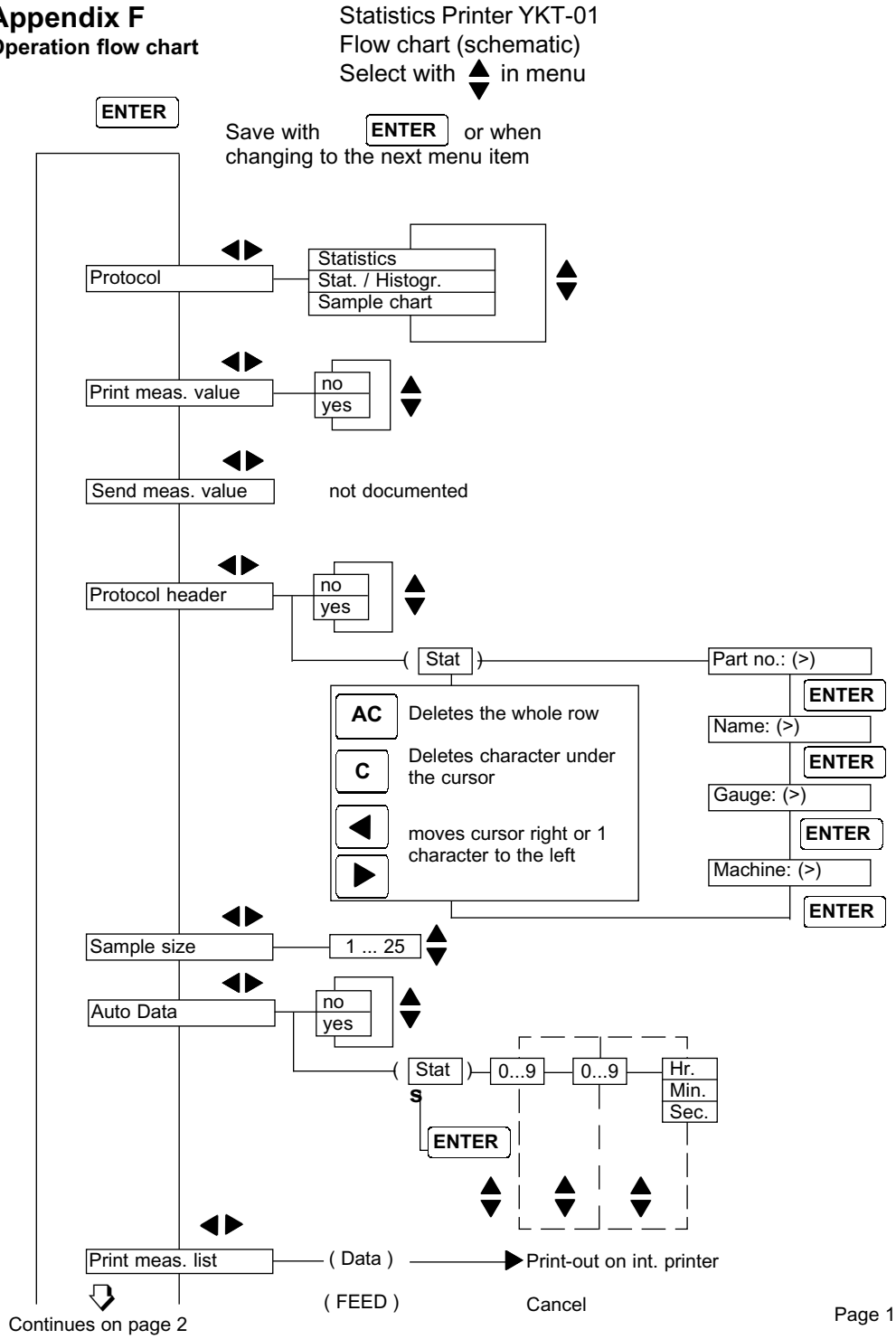
$R_n = \left| x_{n\,min} - x_{n\,min} \right|$ , whereby $x_{n\,max}$ = max. value resp. $x_{n\,min}$ = min. value of the sample

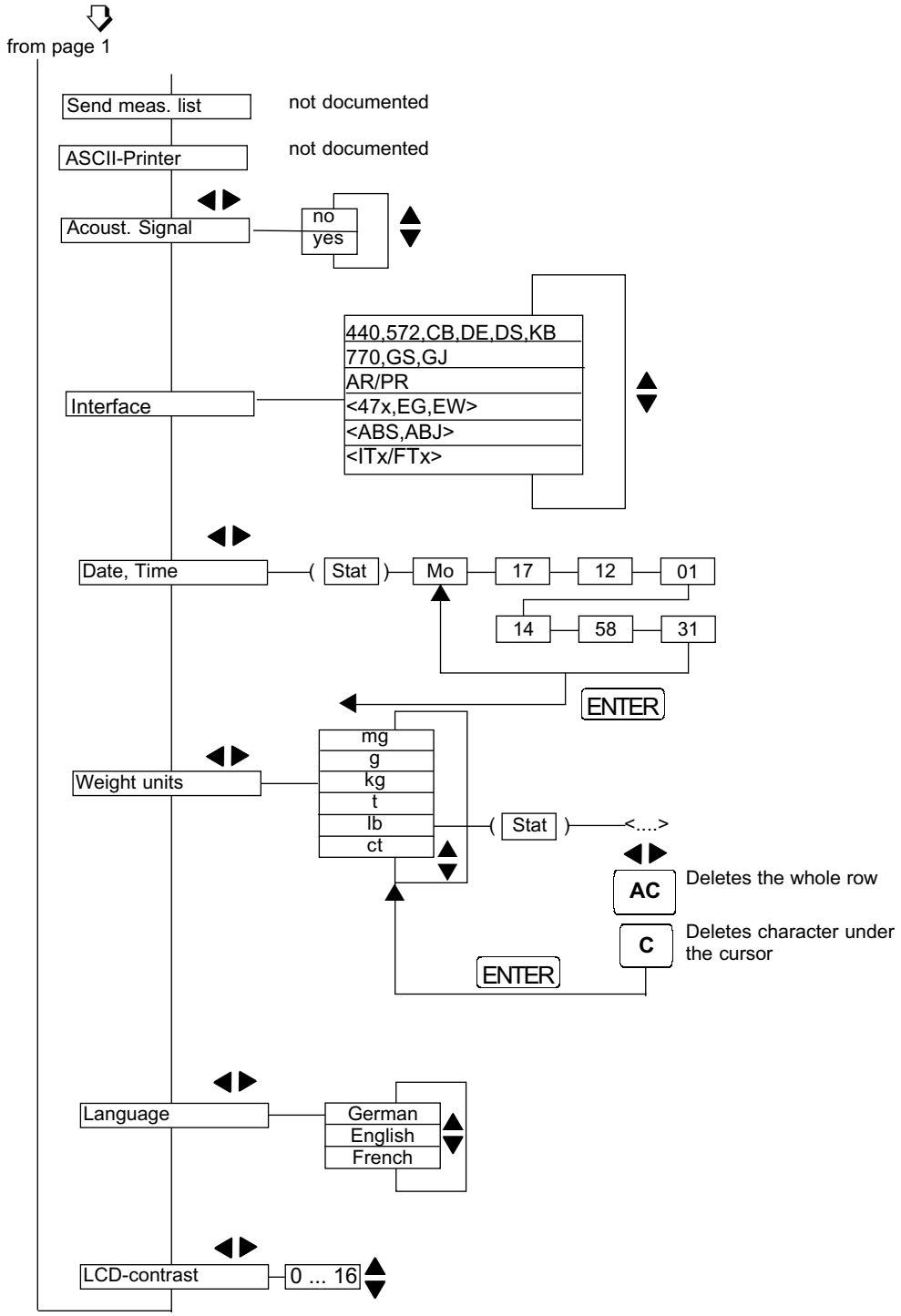
**Table of Formula Constants**

| Stpgröße | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| d2 | 1.28 | 1.693 | 2.059 | 2.326 | 2.534 | 2.704 |
| | | | | | | |
| Stpgröße | 8 | 9 | 10 | 11 | 12 | 13 |
| d2 | 2.847 | 2.970 | 3.078 | 3.173 | 3.258 | 3.336 |
| | | | | | | |
| Stpgröße | 14 | 15 | 16 | 17 | 18 | 19 |
| d2 | 3.407 | 3.472 | 3.532 | 3.588 | 3.640 | 3.689 |
| | | | | | | |
| Stpgröße | 20 | 21 | 22 | 23 | 24 | 25 |
| d2 | 3.735 | 3.778 | 3.819 | 3.858 | 3.895 | 3.931 |

# Appendix F

**Operation flow chart**




from page 1
Send meas. list
not documented
ASCII-Printer
not documented
Acoust. Signal
no
yes
Interface
440,572,CB,DE,DS,KB
770,GS,GJ
AR/PR
<47x,EG,EW>
<ABS,ABJ>
<ITx/FTx>
Date, Time
( Stat )
Mo
17
12
01
14
58
31
ENTER
Weight units
mg
g
kg
t
lb
ct
( Stat )
<....>
AC
Deletes the whole row
C
Deletes character under the cursor
ENTER
Language
German
English
French
LCD-contrast
0 ... 16