Basic information

Intended use

ULTRA X moisture analysers are solely designed to quickly measure moisture and dry matter in solid, viscous and fluid substances using thermogravimetric analysis. A sample is weighed while being dried by infra-red heat.

Common features for all ULTRA X devices:

Short measurement time, gentle and even drying of samples, high reproducibility

Automatic or time-controlled measurement shut-off

UX 3011/ 3011Q/ 3011HQ

Temperature-controlled infra-red heater 250 W/ 375 W
Temperature range: 40 – 200 °C/ 360 °C/600 °C
Stainless steel drying tray 111 mm diameter

UX 3031

Special device for gypsum industry
2 temperature-controlled heaters for separate measurement of free and chemically bound moisture in gypsum products
Temperature range: 40 – 360 °C
Stainless steel drying tray 111 mm diameter

UX 3081/ 3081WQ

Special device for extra large samples,

e.g. in the chipboard industry
2 temperature-controlled ceramic heaters
Temperature range: 40 – 220 °C/ 300 °C
Stainless steel drying tray 245 x 120 mm

Operating instructions for moisture analysers UX 3001 (UX 3011, UX 3031, UX 3081)

Contents

Operating instructions for moisture analysers UX 3001
(UX 3011, UX 3031, UX 3081)
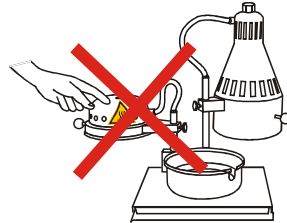
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Safety instructions

Always transport the device in an upright position
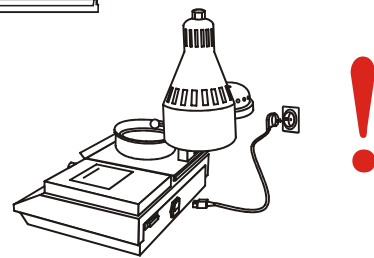and protect it from impact.

Always operate the device on a
level surface, using a vibration-free base.

Avoid draughts.

Never touch the (luminous) heater when it is hot,
as there is a risk of injury!

Always disconnect the plug from the mains supply before
performing any work on the device (e.g. changing the heater)!
Repairs should only be carried out by a qualified technician.

Never place flammable material
next to the device, as there is a
risk of fire!

Please take extra care when using flammable samples!
You may need to contact the manufacturer for advice.

Please be careful not to drop any sample particles
next to the tray support plate.

Carefully remove any particles with
a vacuum cleaner.

Only use accessories specifically designed for use with ULTRA X devices.

Do not move the device during measurement, as this will result in measuring errors.

Do not leave any substances in the measuring tray, if they are not being measured.

Devices should only be shipped in the original packaging using the original packaging material.

ULTRA X moisture analysers are stand-alone units and are not designed to be used in continuous
production runs. Any such use is at your own risk.

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Warranty

a&p instruments undertakes to repair faulty devices within the warranty period, free-of-charge, if the defect is a manufacturing fault. This warranty covers the repair of spare parts and working hours required. It does not cover normal wear-and-tear and soiling and staining of the device. a&p instruments will not accept any freight costs.

This warranty does not apply to:

improper use of the device,
use of the device for purposes other than those stated by a&p instruments,
mechanical damage or damage caused by fluids or sample matter,
incorrect set up or wrong electrical wiring,
mechanical damage of the load cell e.g. as a result of being overloaded

Transport, packaging, installation site

- Please check the packaging and device for any damage upon delivery.
- Please retain the original packaging in case you need to return the goods to a&p instruments.
- Please only use the original packaging when returning the goods.

Accessories supplied:

Tray holder   2 trays   Measuring probe   Tray tongs   Mains cable
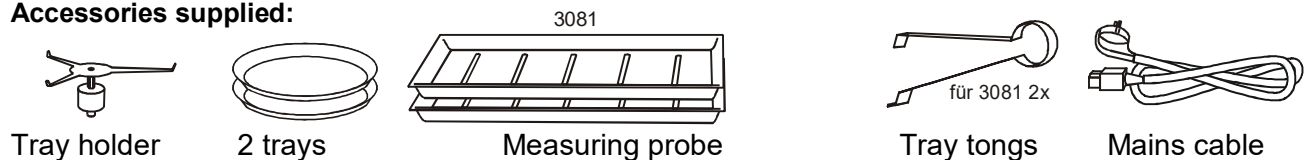
Start-up

1. 1. Place the device on a stable, vibration-free surface, as level as possible and protected from draughts. The most suitable locations are the corners of a room, rooms with only one entrance and heavy tables on concrete floors.

1. 2. (not for ULTRA X 3081)
Start by adjusting the heater to the height marked on the rod. Quartz heaters are 10 mm higher than radiant heaters. To do this, slightly loosen (never completely unscrew) the knurled screw on the back of the reflector holder. Retighten the knurled screw manually.

65 mm

65 mm

UX 3011HQ
no distance
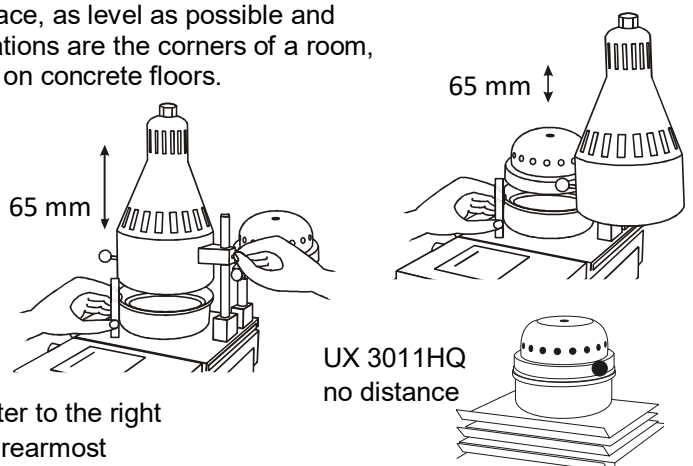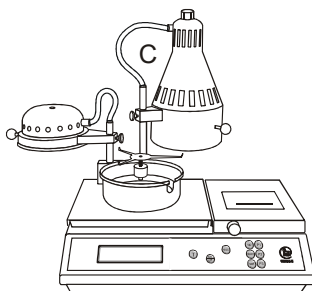
1. 3   Now swing the heater to the right or backwards to its rearmost position. Avoid using force to twist the heater beyond its stop point, as this could damage the device. Place the tray holder on the device by turning it slightly in a clockwise direction. (Also remove it by turning in a clockwise direction).
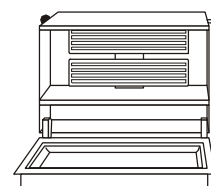
UX 3081

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1. 4. Next place one of the two drying trays supplied on the tray holder using one or two sets of tongs. The notch in the reflector tray acts as an access gap for easy positioning of the tray.

1. 5. Check that the voltage indicated on the type plate matches the local mains voltage.

1. 6. The power cable is inserted into the device's power jack and a suitable earthed mains supply. After the power supply has been connected, the device can be switched on or of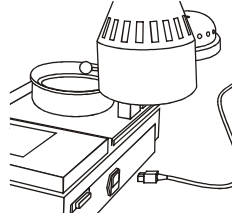f using the on/ off button on the back of the device. Once the device is switched on, the current software version is shown, followed by the weight display.

```
temp.C°              time
ULTRA X 3031
V.03.180215
mode    value (weight)    unit
```

1. 7. In order to prevent weighing system measuring errors, the device should be switched on 20 minutes before being used to allow for heat compensation. If weight values vary in the display's milligram range during this period, this is considered normal within this phase. If the device is switched off using the reset (on/ off) button, it does not require a warm-up period, if switched on again with the same button.

1 8. ULTRA X moisture measuring devices are supplied, so that in most cases substances can be measured immediately. If you are not satisfied with the result, the measurement parameters can be adjusted:

Loading the printing paper

Remove the printer cover. To do this, press the back of the cover.

Insert the paper into the metal slot below the print ribbon and press the line feed button until approx. 20 mm has been inserted.
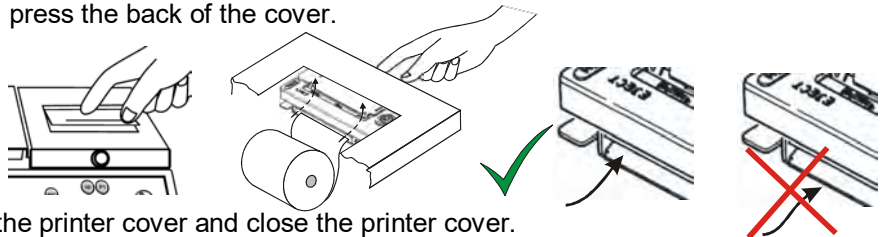
Thread the paper through the slot in the printer cover and close the printer cover.

Changing the print ribbon

Remove the printer cover. To do this, press the back of the cover.
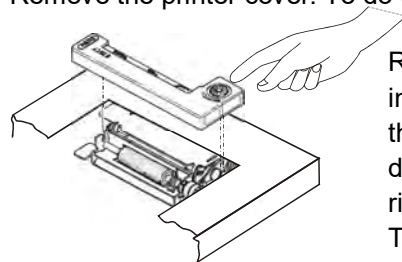
Remove the used print ribbon and insert a new one. You may need to turn the wheel on the print ribbon in the direction of the arrow until the print ribbon cartridge is positioned correctly.

The ribbon must be in of the paper. Close the printer cover.
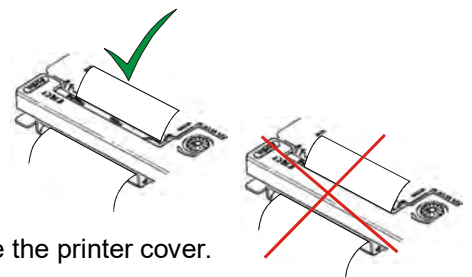
Thermo printer   **The ULTRA X Thermo paper is stable for 10 years.**

Line feed

line feed
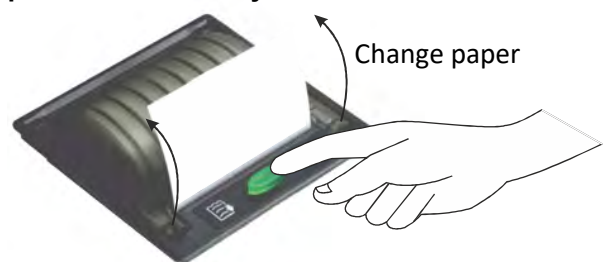
Change paper

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Operation

Display and buttons

	temp. C°		time		
	ULTRA X 3081				
	0.000g				
mode	value (weight)		unit		
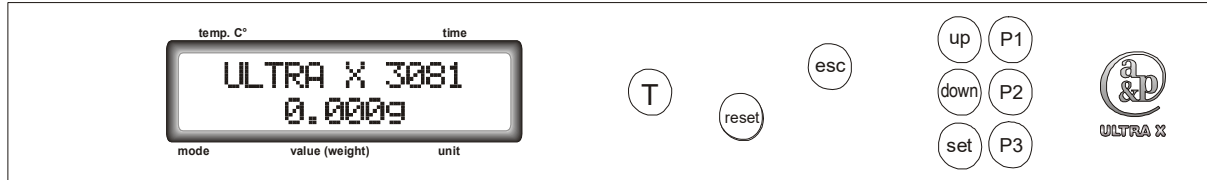
T	Tare button for setting the weight readout back to zero	**up**	Button for accessing and scrolling through the menu	**P1** purity of gypsum
reset	Button for resetting the processor programme	**down**	Button for accessing and scrolling through the menu	**P2** not used
esc	Button for exiting menu levels	**set**	Button for confirming entries	**P3** not used

Any weight lower than the one displayed when the device is switched on cannot be reset to zero.

Ports:

Power supply

Print Conection (only 3081) for separat Printer

Interface RS 232

Power supply switch

USB-Interface
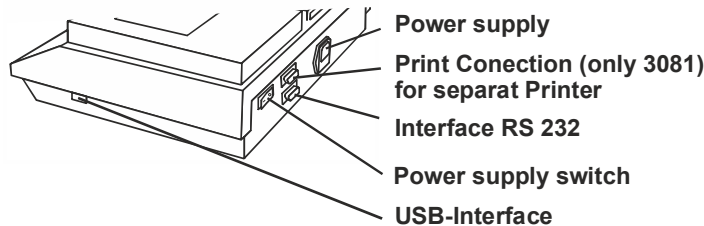
Menu

> **Factory settings:**
> Temperature: 105 °C (45°C / 360 °C)
> Automatic shut-off with parameters:
> Weight loss 5 mg/ Query interval 45 secs / Start of query 3 mins
>   Quartz heater 12mg/ 15 secs / 3 mins
> Buzzer switched on when measuring process is complete

Menu settings

The device's Preferences menu can be accessed using the 'up' or 'down' button.

In this instruction manual, it is assumed that the 'down' button (down) ▶ follows the menu item sequence.

The menu is operated using a standard structure:

UP or DOWN	▶	Set parameters
SET	▶	Confirmation of menu level and if required, return to previous menu level
ESC	▶	Return to previous menu level and exit from menu

If you confirm a wrong entry with 'set', press 'esc' and 'set' to reselect and change the menu item.

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Temperature control

```
temp. C°              time
Menu
Temperature
mode   value (weight)   unit
```
(set) ▶

```
temp. C°              time
Temperature
IR heater:045°C
mode   value (weight)   unit
```
(up)
(down) ▶ (set) ▶
```
temp. C°              time
Temperature
IR heater:045°C↵
mode   value (weight)   unit
```
Value is stored (esc)

```
temp. C°              time
Temperature
Q heater: 360°C
mode   value (weight)   unit
```
(up)
(down) ▶ (set) ▶
```
temp. C°              time
Temperature
Q heater: 360°C↵
mode   value (weight)   unit
```
Value is stored (esc)

```
temp. C°              time
Menu
Temperature
mode   value (weight)   unit
```
(down) ▶
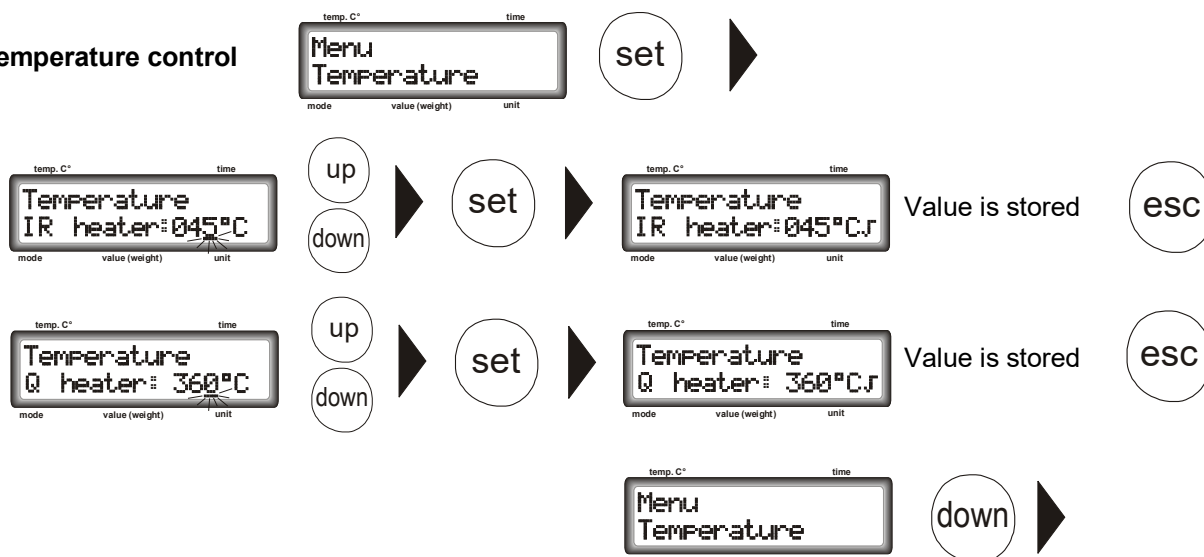
Automatic shut-off or timer

```
temp. C°              time
Menu
Auto/Timer IR
mode   value (weight)   unit
```
(set) ▶

The <u>automatic mode</u> dries the sample until a constant weight is reached and then switches off the heater.
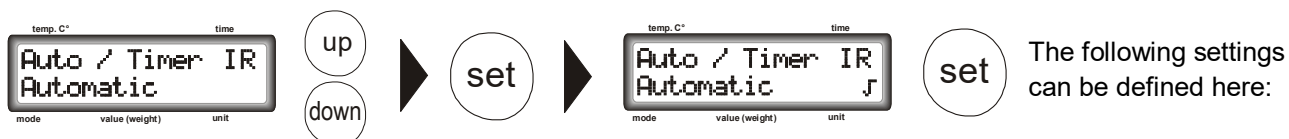
```
temp. C°              time
Auto / Timer IR
Automatic
mode   value (weight)   unit
```
(up)
(down) ▶ (set) ▶
```
temp. C°              time
Auto / Timer IR
Automatic        ↵
mode   value (weight)   unit
```
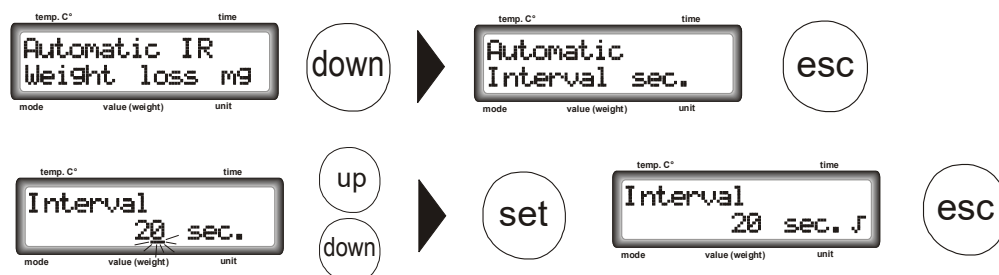(set) The following settings can be defined here:

1. <u>Weight loss in mg</u>
   a value should be defined here which corresponds to approx. 0.1 % of the original sample e.g. original sample 10 g = 10 mg

```
temp. C°              time
Automatic IR
Weight loss mg
mode   value (weight)   unit
```
(set) ▶
```
temp. C°              time
Weight loss mg
       08 mg
mode   value (weight)   unit
```
(up)
(down) ▶ (set) ▶
```
temp. C°              time
Weight loss mg
       08 mg       ↵
mode   value (weight)   unit
```
(esc)

When the weight loss <= the mg weight specified here within the interval period defined below, the measurement is completed, if at least the start of query time limit has expired.

2. <u>Query interval in secs.</u>
   an interval should be selected here, so that the sample is not dried for too short a period but also not for far too long. A period of 20 to 30 secs is normally adequate. None /10-99 secs can be selected.

```
temp. C°              time
Automatic IR
Weight loss mg
mode   value (weight)   unit
```
(down) ▶
```
temp. C°              time
Automatic
Interval sec.
mode   value (weight)   unit
```
(esc)

```
temp. C°              time
Interval
       20 sec.
mode   value (weight)   unit
```
(up)
(down) ▶ (set) ▶
```
temp. C°              time
Interval
       20 sec.↵
mode   value (weight)   unit
```
(esc)

temp. C°	time
Automatic	
Start after min.	
mode	value (weight)	unit

(set) ▶

3. Start of query in minutes

Specify the drying period required for the samples without automatic mode. The factory-set 3 minutes are usually adequate. This value should be increased for extremely low temperatures, so that the device does not switch itself off 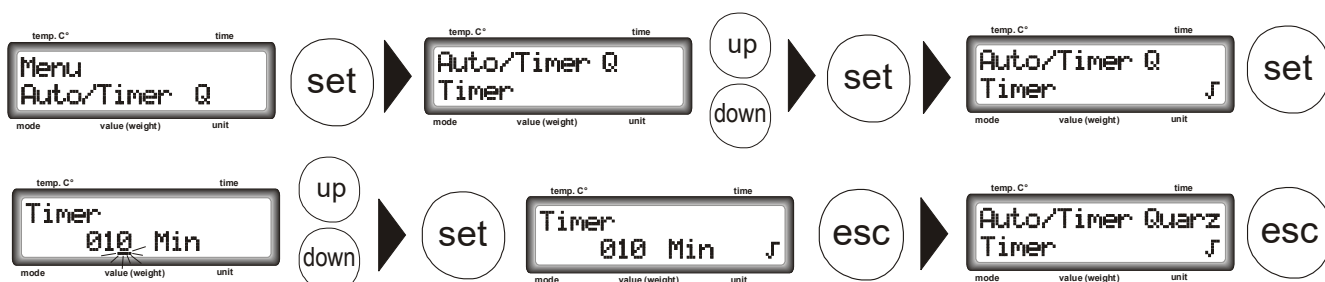prematurely. This affects the UX 3031 in particular, when free moisture is being measured at 45°C. You can select 1-99 mins.
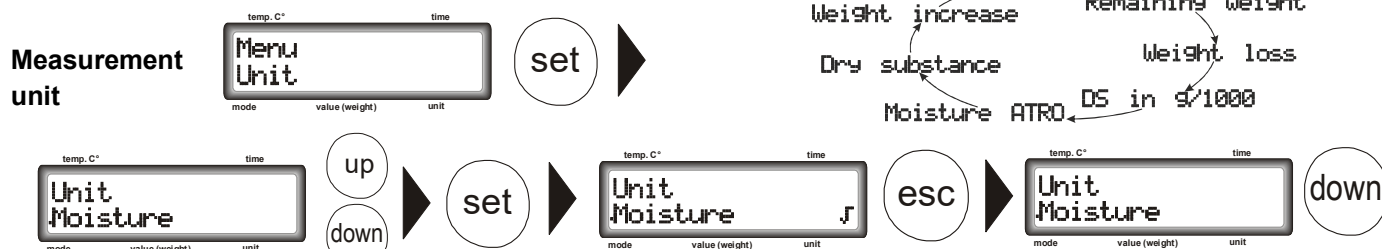
temp. C°	time
Start after min.	
03 min.	

(up) (down) ▶ (set) ▶

temp. C°	time
Start after min.	
03 min. ⌐	

(esc)

temp. C°	time
Auto / Timer IR	
Automatic	

(esc) ▶

temp. C°	time
Menu	
Auto/Timer IR	

(down)
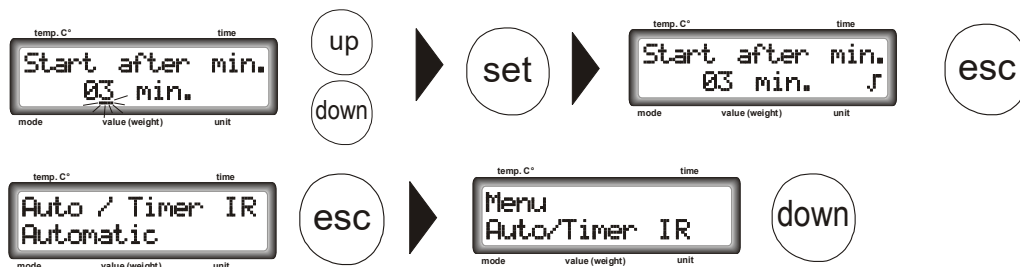
The timer setting is the same as described for the quartz heater.

Values for the luminous and quartz heaters (only UX 3031) are entered separately from each other. Both heaters can be controlled separately from each other via automatic mode or the timer.

| Menu | Auto/Timer Q |
(set) ▶
| Auto/Timer Q | Timer |
(up) (down) ▶ (set) ▶
| Auto/Timer Q | Timer   ⌐ |
(set)

| Timer | 010 Min |
(up) (down) ▶ (set) ▶
| Timer | 010 Min   ⌐ |
(esc) ▶
| Auto/Timer Quarz | Timer   ⌐ |
(esc)

It is possible to select a drying time of 1 – 180 mins

The automatic settings are the same as described for radiant heaters.

Measurement unit

| Menu | Unit |
(set) ▶

Moisture → Remaining weight → Weight loss → DS in g/1000 → Moisture ATRO → Moisture → Dry substance → Weight increase → Moisture

| Unit | Moisture |
(up) (down) ▶ (set) ▶
| Unit | Moisture   ⌐ |
(esc) ▶
| Unit | Moisture |
(down)

During measurement, the device optionally displays:

% moisture
% dry matter (TS)
% moisture Atro ( ), i.e. moisture related to the dry matter
Dry matter (TS) in g/1000g
Weight loss g (V)
Residual weight g (R) (current weight)
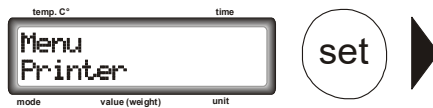Weight increase (IW)

Example: 50 % moisture = 100 % Atro
25 % moisture = 33.3 % Atro
75 % moisture = 300 % Atro

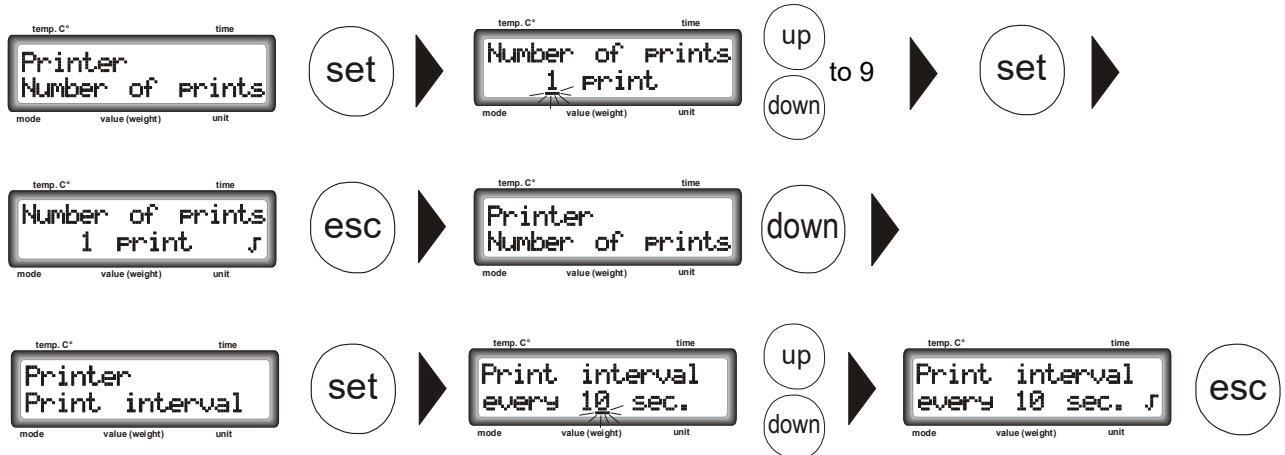If measuring has stopped, you can see the purity of gypsum with ▶ (P1)

Printer options

temp. C°		time
Menu		
Printer		
mode	value (weight)	unit

(set) ▶

For devices without a printer, the number of prints must be set to '1'!

temp. C°		time
Printer		
Number of prints		
mode	value (weight)	unit

(set) ▶

temp. C°		time
Number of prints		
1 print		
mode	value (weight)	unit

(up)
(down) to 9 ▶ (set) ▶

temp. C°		time
Number of prints		
1 print ⏎		
mode	value (weight)	unit

(esc) ▶

temp. C°		time
Printer		
Number of prints		
mode	value (weight)	unit

(down) ▶

temp. C°		time
Printer		
Print interval		
mode	value (weight)	unit

(set) ▶

temp. C°		time
Print interval		
every 10 sec.		
mode	value (weight)	unit

(up)
(down) ▶

temp. C°		time
Print interval		
every 10 sec. ⏎		
mode	value (weight)	unit

(esc)

It is possible to select no printout or every 10 – 99 secs.

temp. C°		time
Printer		
Print interval		
mode	value (weight)	unit

(esc) ▶

temp. C°		time
Menu		
Printer		
mode	value (weight)	unit
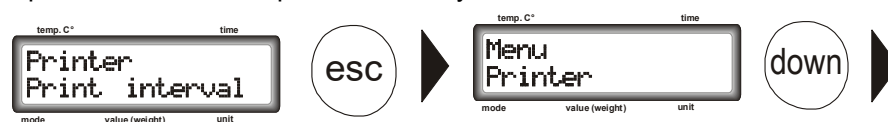
(down) ▶

Data output for external printer (other manufacturer)

temp. C°		time
Menu		
Data output		
mode	value (weight)	unit

(set) ▶

temp. C°		time
Data output		
no LF		
mode	value (weight)	unit

(up)
(down) ▶ (set) Using line feed sends an additional LF via the interface (factory setting without LF).

temp. C°		time
Data output		
no LF ⏎		
mode	value (weight)	unit

(esc) ▶

temp. C°		time
Menu		
Data output		
mode	value (weight)	unit

(down) ▶

Device ID number

temp. C°		time
Menu		
Mashine-ID		
mode	value (weight)	unit

(set) ▶

temp. C°		time
Mashine-ID		
0000		
mode	value (weight)	unit

Enter a number up to 9999 to identify the device

(up)
(down) ▶ (set) ▶

temp. C°		time
Mashine-ID		
1234 ⏎		
mode	value (weight)	unit

(esc)

Each digit can be selected separately.

temp. C°		time
Menu		
Mashine-ID		
mode	value (weight)	unit

(down) ▶

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Date and time

```
temp. C°              time
Menu
Date and Time
mode    value (weight)    unit
```
set ▶

```
temp. C°              time
Date and Time
24.03.16  15:31
mode    value (weight)    unit
```
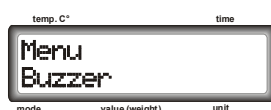
Use 'up'/ 'down' to set the date and press 'set'.
Use 'up'/ 'down' to set the month and press 'set'
Use 'up'/ 'down' to set the year and press 'set'
Use 'up'/ 'down' to set the hour and press 'set'
Use 'up'/ 'down' to set the minutes and press 'set'

up
down
▶ set

```
temp. C°              time
Date and Time
24.03.16  15:31 ⌐
mode    value (weight)    unit
```
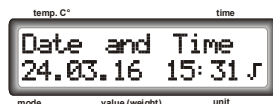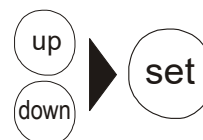
The date and time are shown on the printout

Buzzer

```
temp. C°              time
Menu
Buzzer
mode    value (weight)    unit
```
.
set ▶

Use 'up'/ 'down' and 'set'
to activate or deactivate the buzzer, then press
'set' followed by 'esc'.

▶ down

Calibrating the scales

```
temp. C°              time
Menü
CAL
mode    value (weight)    unit
```
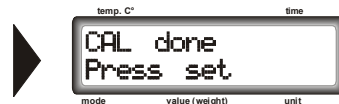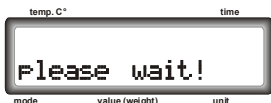set ▶
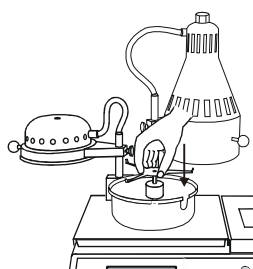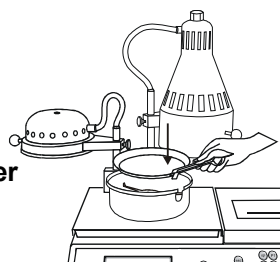
▶ **Tray carrier** **and tray must be on the balance!**

Follow the menu instructions and use a 200 g F1 weight to calibrate the scales.
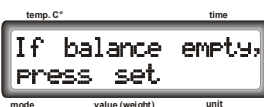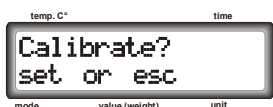
```
temp. C°              time
Calibrate?
set or esc
mode    value (weight)    unit
```
set ▶
```
temp. C°              time
If balance empty,
press set
mode    value (weight)    unit
```
**Tray being used
must be empty.**

set ▶
```
temp. C°              time
please wait!
mode    value (weight)    unit
```
▶
```
time
place 200g
then wait!
mode    value (weight)    unit
```

```
time
remove 200g
than wait!
mode    value (weight)    unit
```
▶
```
temp. C°              time
CAL done
Press set
mode    value (weight)    unit
```
set ▶
```
temp. C°              time
Menü
CAL
mode    value (weight)    unit
```
down ▶
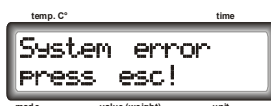
If the display shows
```
temp. C°              time
System error
press esc!
mode    value (weight)    unit
```
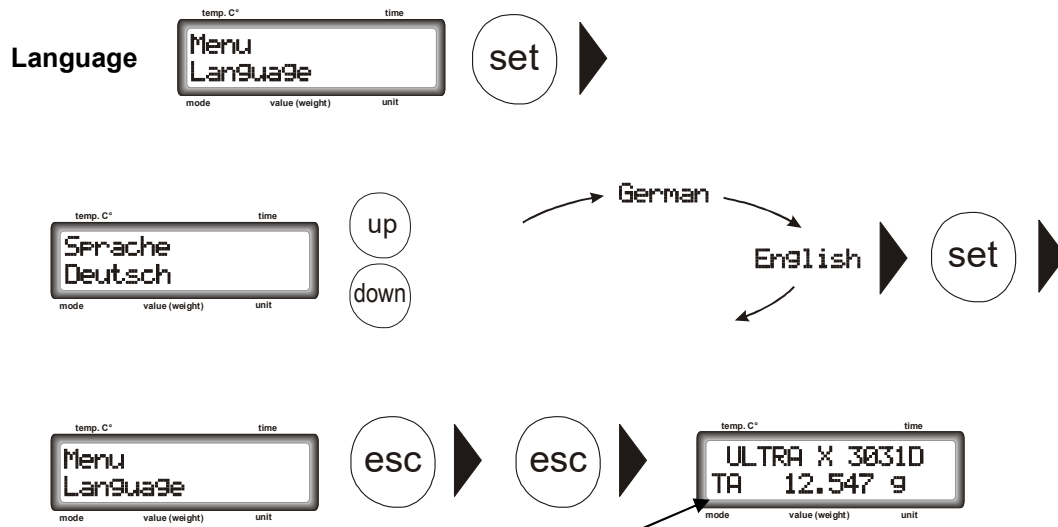switch the power switch off and on, and try it again.

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Language
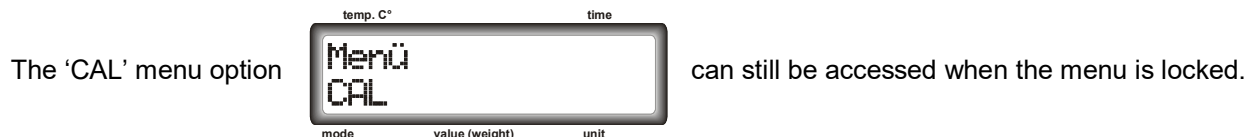
temp. C° | time
```
Menu
Language
```
mode | value (weight) | unit

(set) ▶

temp. C° | time
```
Sprache
Deutsch
```
mode | value (weight) | unit

(up)
(down)

→ German →

English ▶ (set) ▶

temp. C° | time
```
Menu
Language
```
mode | value (weight) | unit

(esc) ▶ (esc) ▶

temp. C° | time
```
ULTRA X 3031D
TA    12.547 g
```
mode | value (weight) | unit

The first two letters on the second line stand for Automatic (A) and Timer (T). They show the mode set for each heater.   Combinations: AA = Automatic quartz heater/ Automatic radiant heater

TA = Timer quartz heater / Automatic radiant heater,

TT = Timer quartz heater / Timer radiant heater,

AT = Automatic quartz heater / Timer radiant heater.

Two letters you see only by ULTRA X 3031/D all other models have only one letter, because one Heater.

You can also lock the menu to prevent accidental changes to drying parameters.

The 'CAL' menu option
temp. C° | time
```
Menü
CAL
```
mode | value (weight) | unit
can still be accessed when the menu is locked.

The menu can be locked or unlocked as shown below:

Press and hold the 'set' button for 5 secs:

temp. C° | time
```
Lock menu
xxxxx
```
mode | value (weight) | unit
▶ (set) Position underscored   Enter 5-digit pin   5x etc.   (up)(down) ▶ (set)
temp. C° | time
```
Lock menu
xxxxx       ⌐
```
mode | value (weight) | unit
(set)

oder

temp. C° | time
```
Open menu
xxxxx
```
mode | value (weight) | unit
▶ (set) Position underscored   Enter 5-digit pin   5x etc.   (up)(down) ▶ (set)
temp. C° | time
```
Open menu
xxxxx       ⌐
```
mode | value (weight) | unit
(set)
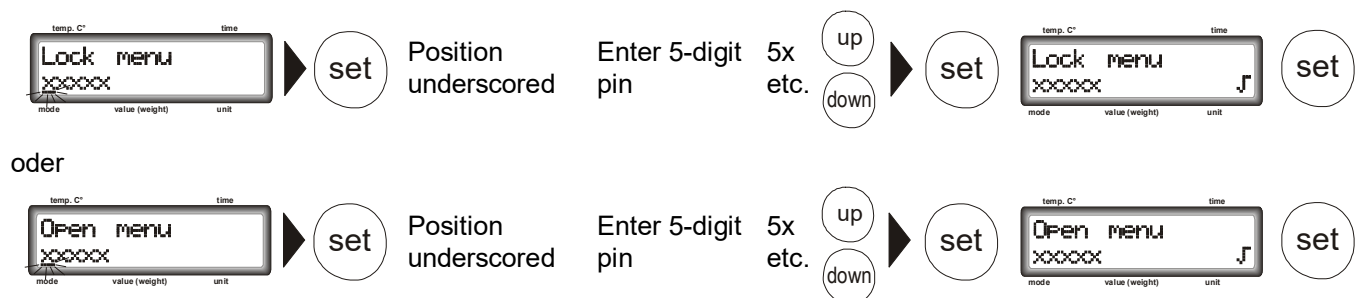
If you forget the PIN, you can obtain a new one from a&p instruments.

Operating instructions for moisture analysers UX 3001 (UX 3011, UX 3031, UX 3081)
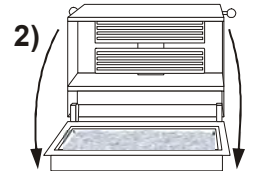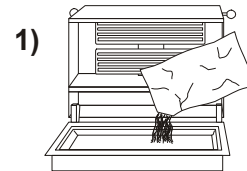
a&p instruments

Moisture analysis process

The device should be connected to the mains supply and switched on with a drying tray. A weight value is displayed.

Set scales to zero using the 'tare' button, display '0.000 g'.

UX 3081

1.

1)

2)
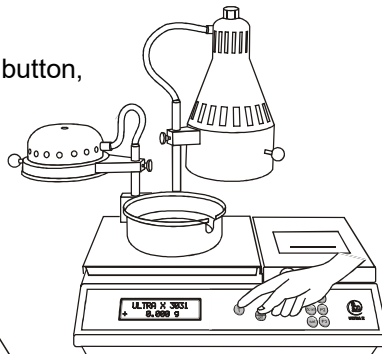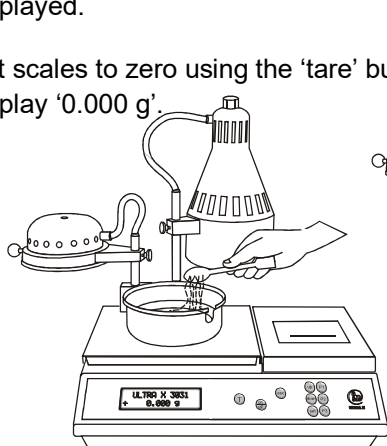
Evenly distribute approx. 10 g sample matter in the tray and wait for the readout to stop.

red — **glow if heater is on**

green — **flashes if measurement ends**

LED´s are off if switch „off"

2. Swing the heater over the sample (for UX 3081, use heater switch). After a short time, the heater switches itself on and the drying phase begins. Header data is now printed for devices with a built-in printer. The sample is dried until it has reached a constant weight; the heater then switches off automatically. The time and measurement value is printed for devices with a printer.
   If you do not wish to make any measurements, please always ensure that the heater is swung back to its rearmost position!
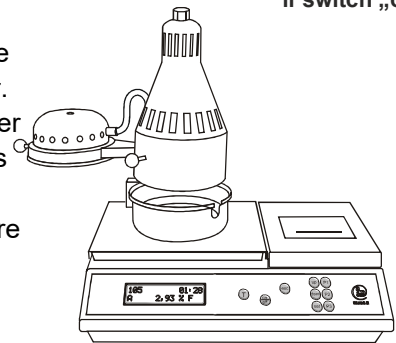
3. Measurement values are displayed for the entire length of time the heater is positioned above the sample.

! If measuring has stopped, you can see the purity of gypsum with ▶ (P1) **!**

The device should not be moved from its position during measurement, as this causes measurement errors.

The built-in printer prints the following at the start of the measurement:

    Model, device ID,
    date, time,
    heater temperature,
    timer or shut-off parameters, initial weight.

And after the device has finished measuring, once the heater has been swung back to its rearmost position:

    Measurement value,
    measurement time,
    substance,
    initials

Please ensure drying trays have cooled down before using for measurement.

If the measurement ends before it is complete, the display shows:

`Drying process was stopped!` ▶ esc ▶ `ULTRA X 3011HQD 8,157 g` weight of the sample.
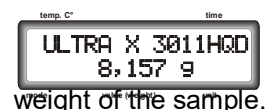
For substances which are difficult to remove from the tray after being dried, we recommend using foil trays, which can be made quickly and economically from aluminium foil using the ULTRA X foil press.

Data interface

Weighing data, temperature and drying data are also shown on the display via a standard USB flash drive and serial interface.
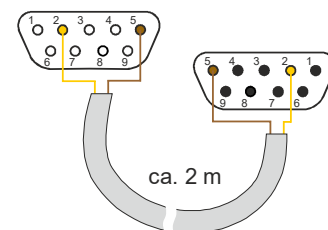
Depending on the model, a separate UX 3092 printer or a computer can be connected to the device.

Interface description

Model: V24 RS 232 serial data transmission and USB flash drive

Data cable
Moisture balance - DataChannel

ca. 2 m

Transmission rate:	9600 baud
Number of bits	8 data bits
	1 stop bit
Parity check	none
Handshake	none

Data transmission using a USB flash drive

If the computer receiving the data has an internet connection, the system automatically installs a driver and creates a COM interface, as soon as the computer is connected to the moisture analyser.
If this is not the case, the driver must be manually installed in the device manager.

Special software is required for transmitting data to a PC:
ULTRA X DataChannel
Data can be exported in four different data formats**: . xls; .html; .xml; .txt.**

The software is extremely easy to install and use:
Connect devices, place CD in PC, the installation is self-explanatory.

Accessories: Order no.:   Application:

Stainless-steel drying tray	10000282	Sample containers for UX 3011/ 3031 (2 trays supplied)
AV drying tray, large		Sample containers for UX 3081(2 trays supplied)
Tray tongs	10000230	for lifting the tray (supplied)
Mains cable	H1000190	Mains connection (supplied)

Consumables:

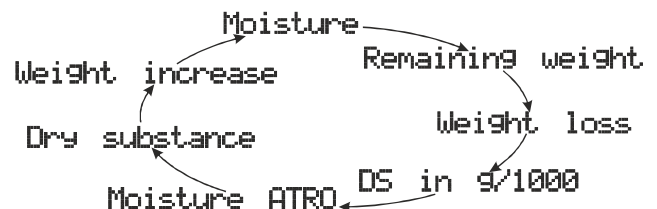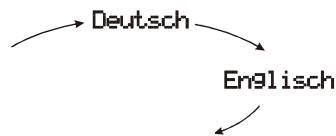|		
Printing paper 58 mm, durable 10 years	I10000234	for built-in thermo printer
Printing paper 58 mm	I1000006	for built-in needle printer
Ribbon	I1000013	for built-in needle printer

Operating instructions for moisture analysers UX 3001
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Overview of menu setup via the UP button

M e n u

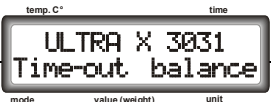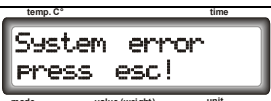▶ Menu language
  Language, GERMAN

Deutsch → Englisch

▶ Menu CAL
  ▶ „ Calibrate? Set or esc" <set>
    ▶ „If scales are empty, press set!" <set>"
      ▶ „Please wait"; „Add 500 g weight, press set" <set>
        ▶ „Please wait"; „Remove 500g weight, then wait"
          ▶ „CAL completed! Press set" <set>

▶ Menu buzzer
  Buzzer activated / deactivated

▶ Menu date + time
  ▶ Date. Day . Month . Year Time Hours : Minutes

▶ Menü ID
  ▶ Device ID 9999
    ▶ Device ID, 0000

▶ Menu data output
  ▶ Data output, without LF / with LF

▶ Menu printer
  ▶ Printer, Number of print copies
    ▶ Number of print copies, _ Print copies
  ▶ Printer, Interval
    ▶ Printout, every __ secs

Moisture → Remaining weight → Weight loss → DS in g/1000 → Moisture ATRO → Dry substance → Weight increase → Moisture

▶ Menu Measurement unit
  ▶ Measurement unit, moisture

▶ Menu Auto/ Timer
  ▶ Auto/ Timer quartz, **Automatic mode**
    ▶ Automatic mode, weight loss mg
      ▶ weight loss mg, __ mg
    ▶ Automatic mode, Interval secs
      ▶ Interval secs, __ secs
    ▶ Automatic mode, Start mins
      ▶ Start mins, __ mins

  ▶ Auto/ Timer radiant heater, **Timer**
    ▶ Auto/ Timer radiant heater, __ mins

▶ Menu Temperature
  ▶ Temperature, radiant heater 170°C (also K heater)
  ▶ Temperature, Quartz heater 360 °C

Error	Reason	Solution
Display blank: `ULTRA X 3031` `TA  -.--- g`	Initial load too small or large, Tray support and / or tray missing	Place empty drying dray on centre of tray support,
	Location with too much disturbance	Place on a vibration-free surface
	Draught	Protect from draughts
	Area around tray support is dirty	Carefully clean area around tray support
	Scale is faulty	Contact a&p instruments
`ULTRA X 3031` `Time-out balance`	Scale without power	Contact a&p instruments
	Scale is not connected to control card	Contact a&p instruments
	Scale is faulty	Contact a&p instruments
Scale continuing to run:	Location with too much disturbance	Place on a vibration-free surface
	Draught	Protect from draughts
	Area around tray holder is dirty	Carefully clean area around tray holder
	Scale is faulty	Contact a&p instruments
Drying parameters cannot be entered, only `Menü` `CAL`	Menu is locked	Unlock menu lock, contact the person responsible or a&p instruments
Menu lock cannot be unlocked	5-digit pin for unlocking menu lock is incorrect	Contact a&p instruments at a.ukena@apinstruments.de
Scale cannot be tared	Weight within minus range	Switch off device, place empty tray on balance and switch on again
	Weight difference less than 16 mg or more than 16 mg	Less than 16 mg set to zero, press button briefly More than 16 mg tare, press and hold
Scale cannot be calibrated:	Initial load too small or large, tray holder and / or tray missing.	Place empty drying dray on centre of tray holder,
	Location with too much disturbance	Place on a vibration-free surface
	Draught	Protect from draughts
	Area around tray holder is dirty	Carefully clean area around tray holder
	Scale setting is incorrect	Contact a&p instruments
	Scale is faulty	Contact a&p instruments
`System error` `press esc!`	System error Calibration process has stopped	Disconnect device from mains and switc on again.
Heater will not switch on:	Heater is faulty	Change heater
	Temperature sensor is faulty	Contact a&p instruments
Infrared heater will not switch off	S202S01 relay is faulty	Contact a&p instruments
Measurement not completing	Shut-off settings incorrect	Check shut-off settings
	Timer settings incorrect	Check timer settings

Error	Reason	Solution
No printout	Numper of prints = 0	Set Number of prints = 1
	Printer is faulty or	Contact a&p instruments
	no data transmission	Contact a&p instruments
No linefeed	Linefeed button or printer is faulty	Contact a&p instruments
	Verbindung zum Drucker ist unterbrocher	Contact a&p instruments
Printout distorted	No connection to printer	Contact a&p instruments
	Printing unit or printer board is faulty	Contact a&p instruments
Printer not printing a strip in the print graphic	Printing unit is not installed correctly	Contact a&p instruments
Printout too light	Ribbon is empty	Change ribbon
	Printing unit is dirty	Contact a&p instruments

Care and maintenance

Please ensure that no pollutants enter the device.
Always keep the area around the tray holder clean.
Do not use compressed air to clean the device.
Do not overload the scales, max. weight 750 g.
Protect device from moisture and impact.

For ideal care and maintenance, we recommend taking out a service contract.

Printer self-test

If your printout is incorrect, you will need to run a printer self-test:

Disconnect the device from the mains supply using the main switch or plug.
Press and hold the linefeed button and connect the device to the mains, then release the linefeed button.
The printer will print a self-test:

```
ULTRA X Druckerselbsttest V 1.05
 !"#$%&'()*+,-./0123456789:;<=>?
@ABCDEFGHIJKLMNOPQRSTUVWXYZäöü^¢
'abcdefghijklmnopqrstuvwxyzäöüß%
```

If this printout is correct, the printing unit and printer board are working but the data transmission is not functioning. If the printout is incorrect, there may be several reasons for this error.
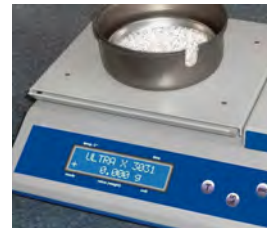
Operating instructions for moisture analysers
UX 3001
(UX 3011, UX 3031, UX 3081)

a&p) instruments

Technical data

Scale:

Weight range	up to 220 g / 400g (models 3081)
Resolution	0.1 g
Sample volume	max. 95 cm³ / 506 cm³ (models 3081)
Weighing tray	110 mm round/ 230 x 110 mm (models 3081)

For moisture analysis:

Initial weight	any weight from approx. 5 g, recommended from 10 g
Heater capacity	Infrared heater 250 watts
	Quartz heater 375 watts
	Ceramic heater 2x 250 watts (3081)/ 2x 400 watts (3081 WQ)
Automatic shut-off	Automatic drying to a constant weight, using 3 factors for I heaters and Q heaters, which can be set separately:
	Query start, query interval, weight loss/ query interval
Temperature	Infrared heater adjustable from 40°C to 170 °C
	Quartz heater adjustable from 105 °C to 360 °C (3011Q)/ 105°C to 600°C (3011HQ)
	Ceramic heater adjustable from 40°C to 180 °C (3081)/ 105°C to 360 °C (3081QW)
Measuring units	% moisture
	% dry matter
	% ATRO moisture
	g solid matter/ kg
Reading accuracy	0.1% readable

Communication:

Data terminal	V24 RS 232
Data output	all weight and measuring data meet GLP requirements with a start time, optional variable interval printout, date, time, total measuring time etc.

Using **ULTRA X DataChannel** software can be transmitted to a PC as a

.xls file in Microsoft Excel,
.html file,
.xml file and
.txt file.

For operating the device:

Mains connection	230 V 2%/ + 15 %
Mains frequency	48-63 Hz
Power input	250 watts – 850 watts, depending on the model
Dimensions	approx. B 385 x D 275 x H 420 mm
Weight	approx. 9 kg/ 15 kg (3081 model)

Technical data subject to change without notice
ULTRA X moisture analysers are stand-alone units and not suitable for use in continuous production runs. We shall not accept any liability for incorrect readings!

Operating instructions for moisture analysers UX 3001
(UX 3011, UX 3031, UX 3081)

Accessories:	Order no.:	Use:
Stainless steel drying tray	10000282	Sample carriers UX 3011/ 3031 (2 trays supplied)
AV drying tray, large	10000288	Sample carriers UX 3081 (2 trays supplied)
Tray tongs	10000230	for lifting the tray (supplied)
Mains cable	H1000019	Mains connection (supplied)
Calibration weight F1 200 g	10000403	for calibrating the scales
Aluminium foil 130 mm x 0.1 mm	H1000016	for placing on the drying tray
Aluminium foil 130 mm x 0.3 mm	H1000017	for placing on the drying tray
Aluminium foil 130 mm x 260 mm	H1000013	for placing on the drying tray
Foil press	10000062	for shaping aluminium foil
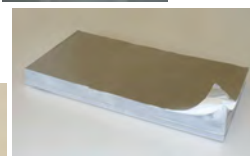
Software	DataChannel for transmitting data to a PC

Consumables:
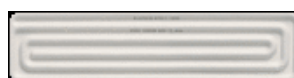
Printing paper 58 mm	I10000234	for built-in thermo printers	durable 10 years
Printing paper 58 mm	I1000006	for built-in needle printers	
Ribbon	I1000013	for built-in printers	
Infrared heater 250 W	H1000013	Spare part	
Quartz heater 375 W	10000139	Spare part	
Ceramic heater 250 W	10000405	Spare part	
Ceramic heater 400 W	10000318	Spare part	
Ceramic heater 600 W		Spare part	