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

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Operating instructions for moisture analysers UX 3011, UX 3011G, UX 3011Q, UX 3011HQ UX 3031

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Operating instructions for moisture analysers
UX 3011, UX 3011G, UX 3011Q, UX 3011HQ
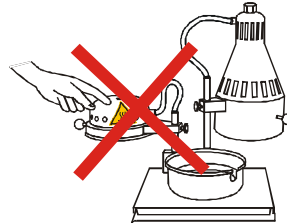# UX 3031

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Safety instructions

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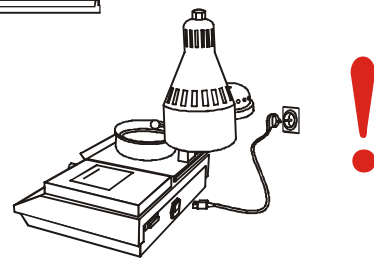and protect it from impact.

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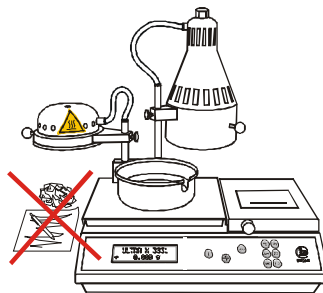
Please take extra care when using flammable samples!
You may need to contact the manufacturer for advice.

Please be careful not to drop any sample particles
next to the tray support plate.
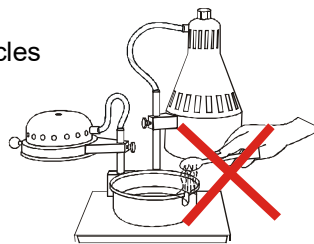
Carefully remove any particles with
a vacuum cleaner.

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

Operating instructions for moisture analysers UX 3011, UX 3011G, UX 3011Q, UX 3011HQ UX 3031

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Made in Germany

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:
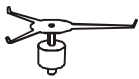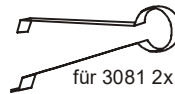
Tray holder 2 trays für 3081 2x Tray tongs Mains cable

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.

65 mm

1. 2. Start by adjusting the heater to the height marked on the rod. To do this, slightly loosen (never completely unscrew) the knurled screw on the back of the reflector holder. Retighten the knurled screw manually.
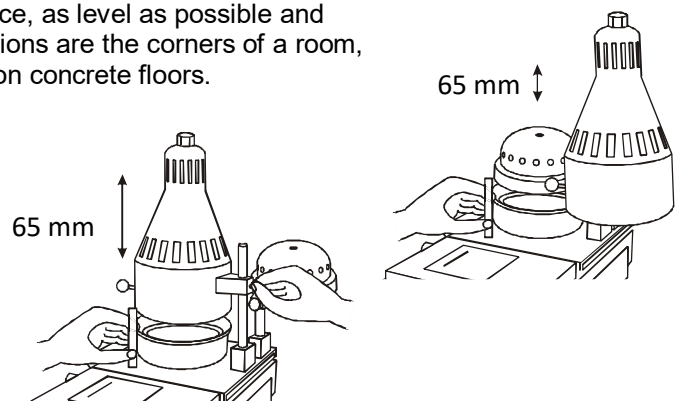
65 mm

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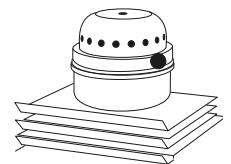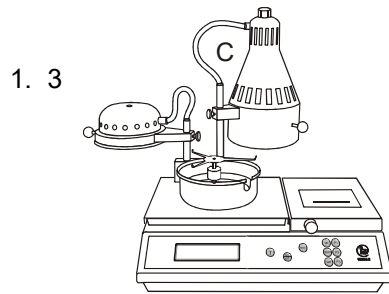
1. 3   Now swing the heater to the right or the left to its rearmost position. Avoid using force to twist the heater beyond its stop point, as this could damage the device. Place the tray holder on the device by turning it slightly in a clockwise direction. (Also remove it by turning in a clockwise direction).

1. 4.   Next place one of the two drying trays supplied on the tray holder using the tong.
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 off 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.
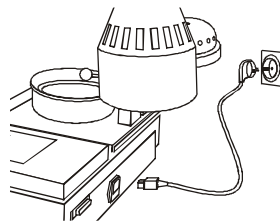
1. 7.   In order to prevent weighing system measuring errors, the device should be switched on 20 minutes before being used to allow for heat compensation. If weight values vary in the display's milligram range during this period, this is considered normal within this phase. If the device is switched 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:

Printer

Line feed

Change Paper
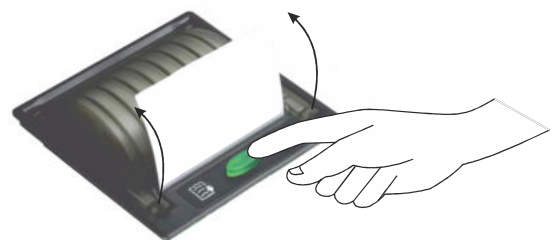
The ULTRA X Thermo paper is stable for 10 years.

Operating instructions for moisture analysers UX 3011, UX 3011G, UX 3011Q, UX 3011HQ UX 3031

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Operation

Display and buttons

```
temp. C°                    time

   ULTRA X 3081
       0.000g

mode      value (weight)      unit
```

T   reset   esc   up P1   down P2   set P3   a&p ULTRA X

T	Tare button for setting the weight readout back to zero	up	Button for accessing and scrolling through the menu	P1	percentage purity only for UX 3031
reset	Button for resetting the processor programme	down	Button for accessing and scrolling through the menu	P2	programm memory (otional)
esc	Button for exiting menu levels	set	Button for confirming entries	P3	residue on ignition only for UX 3011G

Ports:

Power Supply

Interface RS 232

Power Supply switch

Menu

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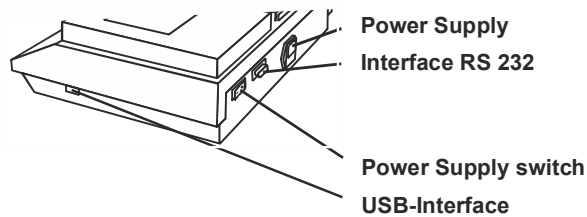
Factory settings:
Temperature: 105 °C (45°C / 360 °C)
Automatic shut-off with parameters:
Weight loss 5 mg/ Query interval 45 secs / Start of query 3 mins
    Quartz heater 12mg/ 15 secs / 3 mins
Buzzer switched on when measuring process is complete

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.

Operating instructions for moisture analysers UX 3011, UX 3011G, UX 3011Q, UX 3011HQ UX 3031

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 ▶

The temperature that is set on the device relates to the thermal radiation that hits the sample to be dried. The thermal radiation is an electromagnetic wave for the transmission of energy. As this energy creates heat in the sample, the moisture evaporates from the sample. The temperature is used to set the energy that allows the moisture to evaporates from the material (more temperature is more energy).

The set temperature is not to be equated with the temperature to which the material or the environment heats up.- The material or ambient temperature is a consequence of the drying process, not the cause of the drying.

Automatic shut-off or timer

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

set ▶
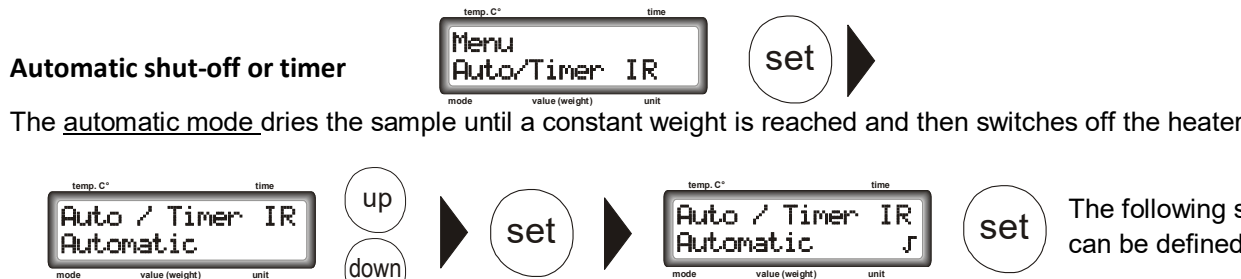
The <u>automatic mode</u> dries the sample until a constant weight is reached and then switches off the heater.

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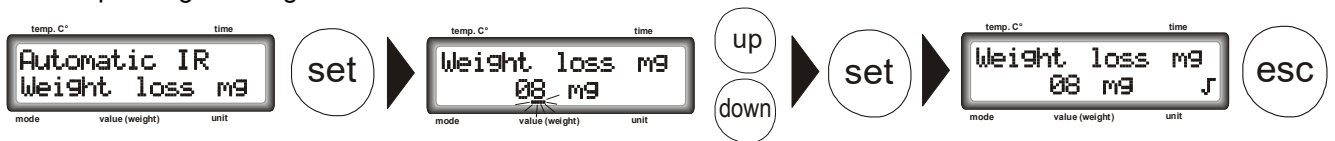
When the weight loss <= the mg weight specified here within the interval period defined below, the measurement is completed, if at least the start of query time limit has expired.

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.
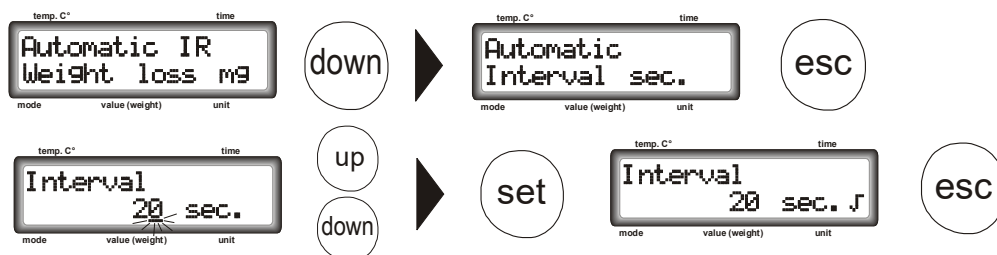
temp. C°		time
Automatic IR		
Weight loss mg		
mode	value (weight)	unit

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.              │
└─────────────────────────┘
mode      value (weight)   unit
```
(up) (down) ▶ (set) ▶
```
temp. C°                    time
┌─────────────────────────┐
│ Start after min.        │
│    03 min.      ⌐       │
└─────────────────────────┘
mode      value (weight)   unit
```
(esc)

```
temp. C°                    time
┌─────────────────────────┐
│ Auto / Timer IR         │
│ Automatic               │
└─────────────────────────┘
mode      value (weight)   unit
```
(esc) ▶
```
temp. C°                    time
┌─────────────────────────┐
│ Menu                    │
│ Auto/Timer IR           │
└─────────────────────────┘
mode      value (weight)   unit
```
(down)
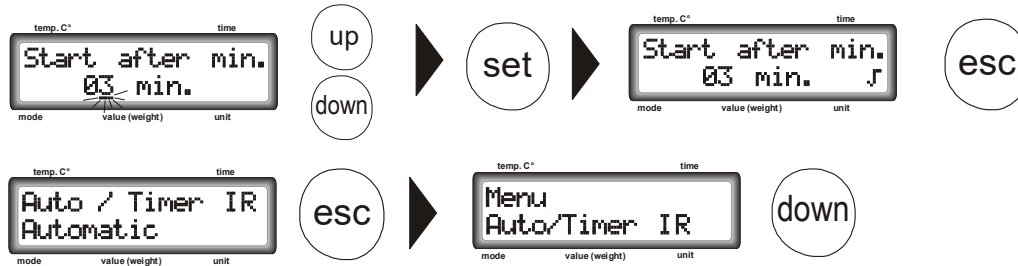
The timer setting is the same as described for the quartz heater.

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.

```
temp. C°                    time
┌─────────────────────────┐
│ Menu                    │
│ Auto/Timer Q            │
└─────────────────────────┘
mode      value (weight)   unit
```
(set) ▶
```
temp. C°                    time
┌─────────────────────────┐
│ Auto/Timer Q            │
│ Timer                   │
└─────────────────────────┘
mode      value (weight)   unit
```
(up) (down) ▶ (set) ▶
```
temp. C°                    time
┌─────────────────────────┐
│ Auto/Timer Q            │
│ Timer           ⌐       │
└─────────────────────────┘
mode      value (weight)   unit
```
(set)

```
temp. C°                    time
┌─────────────────────────┐
│ Timer                   │
│    010 Min              │
└─────────────────────────┘
mode      value (weight)   unit
```
(up) (down) ▶ (set) ▶
```
temp. C°                    time
┌─────────────────────────┐
│ Timer                   │
│    010 Min      ⌐       │
└─────────────────────────┘
mode      value (weight)   unit
```
(esc) ▶
```
temp. C°                    time
┌─────────────────────────┐
│ Auto/Timer Quarz        │
│ Timer           ⌐       │
└─────────────────────────┘
mode      value (weight)   unit
```
(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
```
temp. C°                    time
┌─────────────────────────┐
│ Menu                    │
│ Unit                    │
└─────────────────────────┘
mode      value (weight)   unit
```
(set) ▶

```
            Moisture
    Unit              Dry substance
Remaining weight      Moisture ATRO
        DS in g/1000
```

```
temp. C°                    time
┌─────────────────────────┐
│ Unit                    │
│ Moisture                │
└─────────────────────────┘
mode      value (weight)   unit
```
(up) (down) ▶ (set) ▶
```
temp. C°                    time
┌─────────────────────────┐
│ Unit                    │
│ Moisture        ⌐       │
└─────────────────────────┘
mode      value (weight)   unit
```
(esc) ▶
```
temp. C°                    time
┌─────────────────────────┐
│ Unit                    │
│ Moisture                │
└─────────────────────────┘
mode      value (weight)   unit
```
(down)

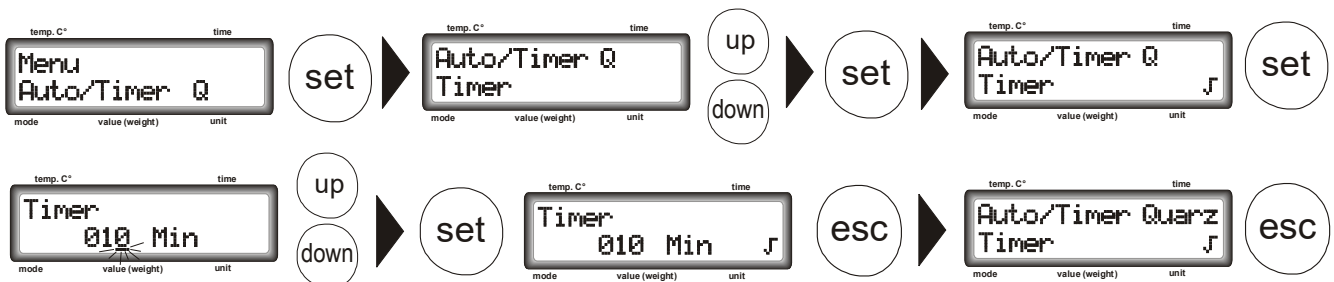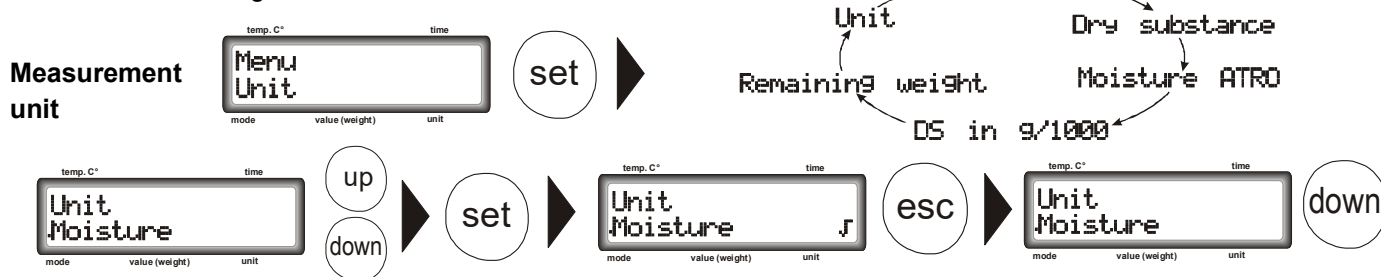During measurement, the device optionally displays:
% moisture
% dry matter (TS)
% moisture Atro ( ), i.e. moisture related to the dry matter
Dry matter (TS) in g/1000g
Weight loss g (V)
Residual weight g (R) (current weight)
After measuring of gypsum, the purity can displayed with <P1> button.

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

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) to 9 ▶ (set) ▶
(down)
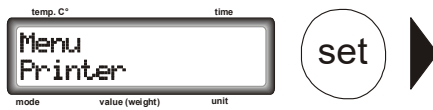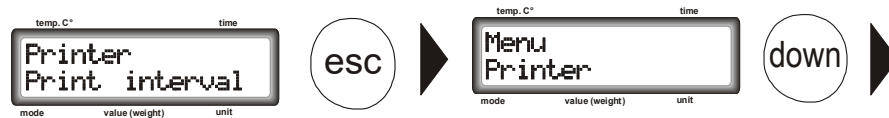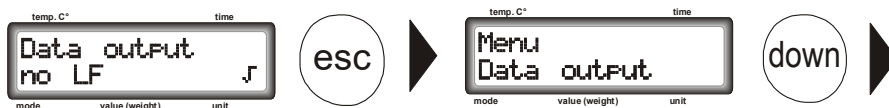
temp. C°		time
Number of prints		
1 print ⏎		
mode	value (weight)	unit

(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) ▶ (set) Using line feed sends an additional LF via the interface (factory
(down) 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) ▶ (set) ▶
(down)

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) ▶

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
```
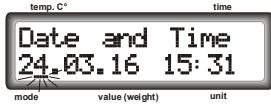
Use 'up'/ 'down' to set the date and press 'set'.
Use 'up'/ 'down' to set the month and press 'set'
Use 'up'/ 'down' to set the year and press 'set'
Use 'up'/ 'down' to set the hour and press 'set'
Use 'up'/ 'down' to set the minutes and press 'set'

up ▶ set
down

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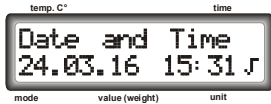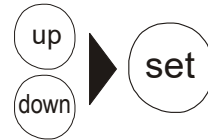
The date and time are shown on the printout

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 ▶
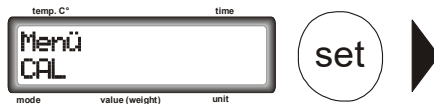
▶ **Tray carrier**   **and tray must be on the balance!**

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
```
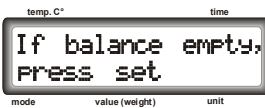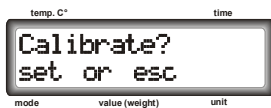
**Tray being used
must be empty.**

set ▶

```
temp. C°                    time
please  wait!
mode      value (weight)      unit
```

▶

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

▶

```
temp. C°                    time
remove  200g,
then  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
```
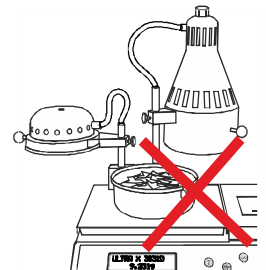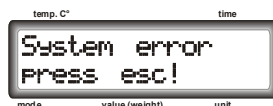
switch the power switch off and on, and try it again.

The reason for this, please look at "potential errors" on page 15

Operating instructions for moisture analysers UX 3011, UX 3011G, UX 3011Q, UX 3011HQ UX 3031

Language

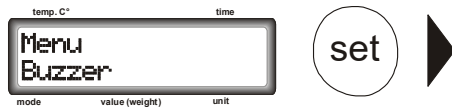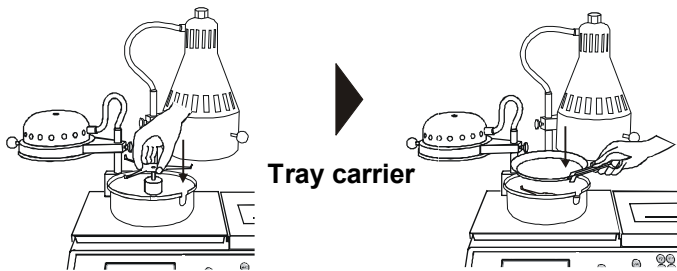| temp. C°	time
Menu	
Language	
mode	value (weight)	unit

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.

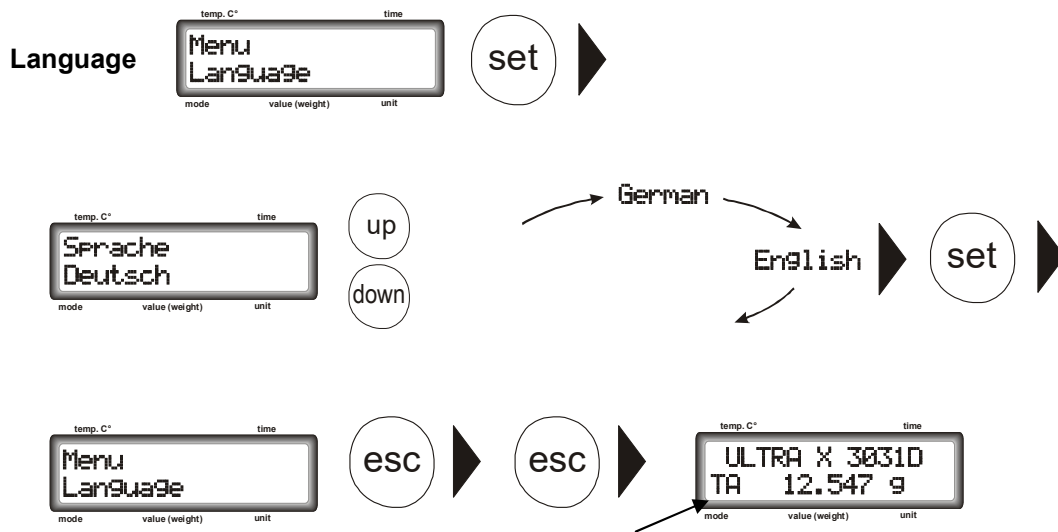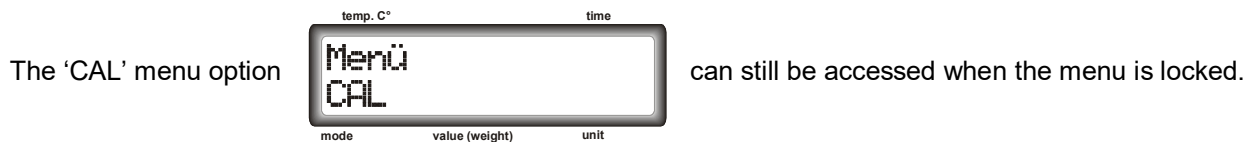**You can also lock the menu to prevent accidental changes to drying parameters.**

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 Under scored   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 Under scored   Enter 5-digit pin   5x etc.   up / down ▶ set

temp. C°	time
Open menu	
xxxxx ⌐	
mode	value (weight)	unit

set
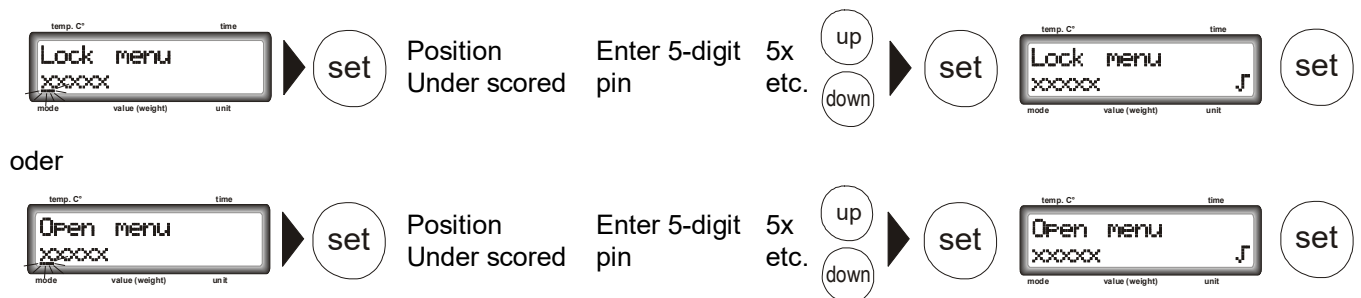
If you forget the PIN, you can obtain a new one from a&p instruments.

Saving drying parameters in the **program memory** using the ULTRA X 3031D as an example

If your device has a program memory, appears in the top left of the display
"HP" for type UX3011 and a number of 1-9,
"QP" for type UX3011Q and UX3011HQ and a number of1-9,
"HP" for type UX3031 and a number of 1-9 for the infra-red heater,
or "QP" and a number of 1-9 for the quartz heater,

```
 time
┌──────────────────┐
│IP1   UX 3011D    │
│A      0,000 g    │
└──────────────────┘
 mode  value (weight)  unit
```

```
 time
┌──────────────────┐
│QP1   UX 3011QD   │
│A      0,000 g    │
└──────────────────┘
 mode  value (weight)  unit
```

```
 time
┌──────────────────┐
│IP1   UX 3031D    │
│AA     0,000 g    │
└──────────────────┘
 mode  value (weight)  unit
```
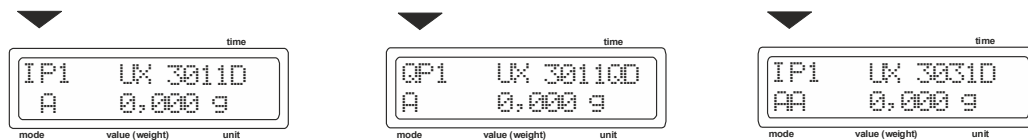
depending on which heater the program memory was activated for from the manufacturer,
here for the infra-red heater.

The standard parameters are set fom the manufacturer at the program memory place 1 .

The di?erent drying parameters can be saved or be changed with button   .
Drying parameters are: temperature and the parameters of the automatic or the timer.   (P2)

(P2) ▶
```
┌──────────────────┐
│Memory            │
│automatic 1       │
└──────────────────┘
 mode  value (weight)  unit
```
(up)(down) ▶
```
┌──────────────────┐
│Memory            │
│automatic 2       │
└──────────────────┘
 mode  value (weight)  unit
```
(set) ▶
```
┌──────────────────┐
│IP2   UX 3011D    │
│A      0,000 g    │
└──────────────────┘
 mode  value (weight)  unit
```

Here you can choose between the 9 memory places.
Then the menu set the temperature, the weight loss, the query interval and the query start.
All other parameters and settings are not saved individually to the memory place.

(down) ▶
```
 time
┌──────────────────┐
│Menu   HP2        │
│Temperature       │
└──────────────────┘
 mode  value (weight)  unit
```
(set) ▶
```
 time
┌──────────────────┐
│Temperature       │
│IR heater105°C↵   │
└──────────────────┘
 mode  value (weight)  unit
```
(up)(down) ▶ (set) ▶

(down) ▶
```
 time
┌──────────────────┐
│Menu   HP2        │
│Auto/Timer IR     │
└──────────────────┘
 mode  value (weight)  unit
```
(set) ▶
```
 time
┌──────────────────┐
│Auto/Timer IR     │
│Automatic    ↵    │
└──────────────────┘
 mode  value (weight)  unit
```
(set) ▶

(down) ▶
```
 time
┌──────────────────┐
│Automatic         │
│Weight loss mg    │
└──────────────────┘
 mode  value (weight)  unit
```
(set) ▶
```
 time
┌──────────────────┐
│Weight loss mg    │
│     05 mg   ↵    │
└──────────────────┘
 mode  value (weight)  unit
```
(up)(down) ▶ (set) ▶ (esc)

(down) ▶
```
 time
┌──────────────────┐
│Automatic         │
│Interval sec.     │
└──────────────────┘
 mode  value (weight)  unit
```
(set) ▶
```
 time
┌──────────────────┐
│Interval sec.     │
│     45 s    ↵    │
└──────────────────┘
 mode  value (weight)  unit
```
(up)(down) ▶ (set) ▶ (esc)

(down) ▶
```
 time
┌──────────────────┐
│Automatic         │
│Start after min.  │
└──────────────────┘
 mode  value (weight)  unit
```
(set) ▶
```
 time
┌──────────────────┐
│Start after min.  │
│     03 min  ↵    │
└──────────────────┘
 mode  value (weight)  unit
```
(up)(down) ▶ (set) ▶ 4 x (esc)

Changes for the quartz heater to the unit of measurement, printer settings, data output, device ID, date and time,
Buzzer and language, same as temperature and the parameters of the automatic system a?ect all program
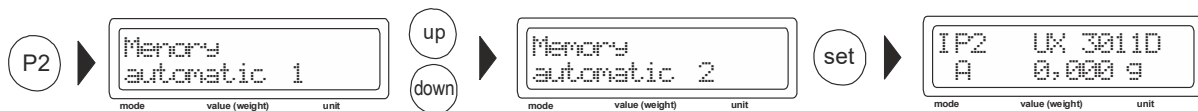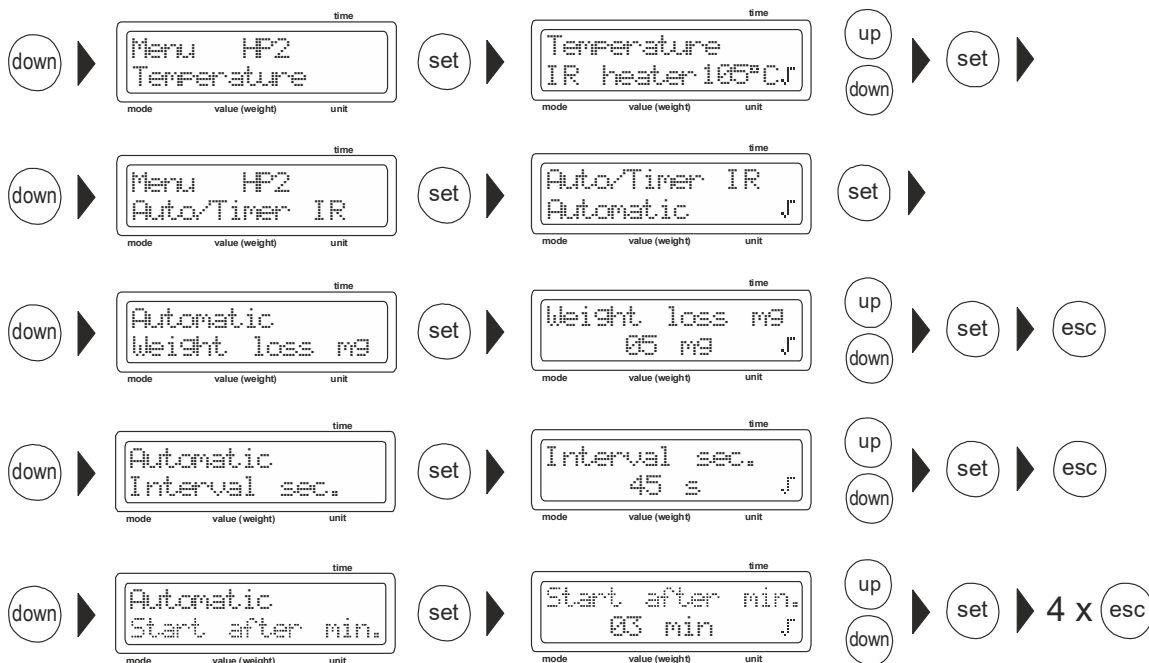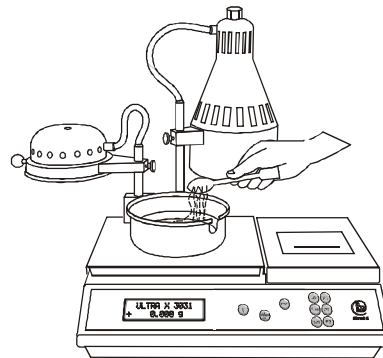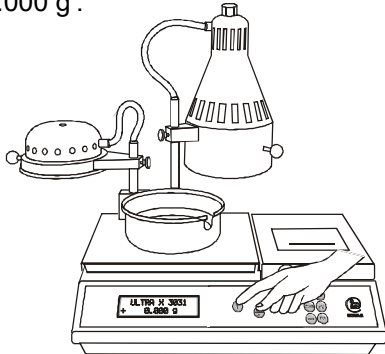memories at the same time.

Operating instructions for moisture analysers UX 3011, UX 3011G, UX 3011Q, UX 3011HQ UX 3031

**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'.

1.

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

2. Swing the heater over the sample. 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!

red — **glow if heater is on**

green — **flashes if measurement ends**

LED´s are off if switch „off"
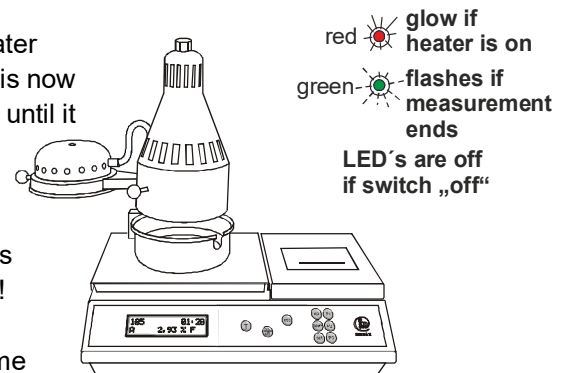
3. Measurement values are displayed for the entire length of time the heater is positioned above the sample.

! **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:	And after the device has finished measuring, once the heater has been swung back to its rearmost position:
Model, device ID, date, time, heater temperature, timer or shut-off parameters, initial weight.	Measurement value, measurement time, substance, initials

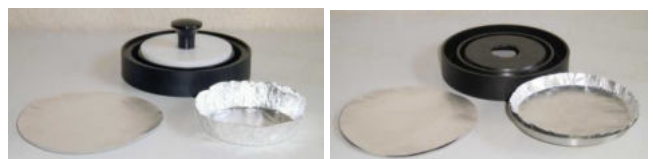Please ensure drying trays have cooled down before using for measurement.

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

`Drying rocess 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.
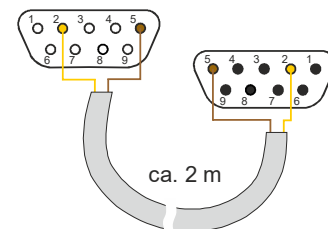
Depending on the model, a separate UX 3092 printer or a computer can be connected to the device.

Interface description

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

Data cable
Moisture balance - DataChannel

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

ca. 2 m

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.

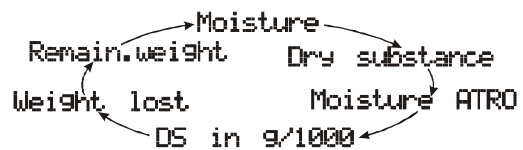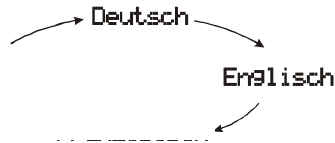| **Accessories**:	Order no.:	Application:
Stainless-steel drying tray	10000282	Sample containers for UX 3011/ 3031 (2 trays supplied)
Tray tongs	10000230	for lifting the tray (supplied)
Mains cable	H1000190	Mains connection (supplied)

Consumables:	Order no.:	Application
Printing paper 58 mm	I1000234	for built-in printer
Aluminium foil 130 mm x 0.3 mm	H1000017	for placing on the drying tray
Foil press	10000062	for shaping aluminium foil
Infrared heater 250 W	H1000130	Spare part
Quartz heater 375 W	10000139	Spare part
Quartz heater 375 W HQ	10000149	Spare part

Operating instructions for moisture analysers UX 3011, UX 3011G, UX 3011Q, UX 3011HQ UX 3031
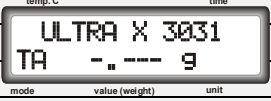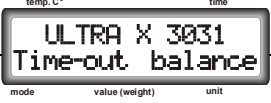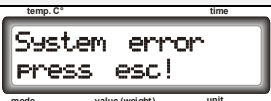
Overview of menu setup via the UP button

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

> Menü PreFlash (only for Infrared heater)
>> Preflash, on/off
>>> Preflash, Pre.-Temp., __°C
>>> Preflash, Remain.weight, __%

> Menu Measurement unit
>> Measurement unit, moisture

Moisture → Dry substance → Moisture ATRO → DS in g/1000 → Weight lost → Remain.weight → 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

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E-Mail: info@apinstruments.de, Internet: www.apinstruments.de

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Potential errors

Error	Reason	Solution
Display		
Display blank: temp. C° time ULTRA X 3031 TA -.--- g mode value (weight) unit	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
temp. C° time ULTRA X 3031 Time-out balance mode value (weight) unit	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
Menu		
Drying parameters cannot be entered, only temp. C° time Menü CAL mode value (weight) unit	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		
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
temp. C° time System error press esc! mode value (weight) unit	System error Calibration process has stopped	Disconnect device from mains and switch on again.

Error	Reason	Solution
Measuring		
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
	Automatic shut-off is set incorrectly	Check shut-off settings
	Timer is set incorrectly	Check timer settings
Measurement not completing	Shut-off settings incorrect	Check shut-off settings
	Timer settings incorrect	
Printer		
No printout	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
	No connection to printer	Contact a&p instruments
Printout invisible	No thermal paper	Use the thermal paper from a&p
	Printing unit or printer board is faulty	Contact a&p instruments
Printout too light	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 220 g, for ULTRA X 3081 max. 400 g.

Protect device from moisture and impact.

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

Disposal

The devices can be sent to a&p instruments for disposal.
Do not dispose of with household waste!

Operating instructions for moisture analysers UX 3011, UX 3011G, UX 3011Q, UX 3011HQ UX 3031

Technical data

Scale:

Weight range	up to 220 g
Resolution	0.1 g
Sample volume	max. 95 cm³
Weighing tray	110 mm round

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

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

Measuring units — % moisture
% dry matter
% ATRO moisture
g solid matter/ kg

Reading accuracy 0.1% readable

Communication:

Data terminal	V24 RS 232/ USB
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 DataBridge** software can be transmitted to a PC as a
.xls file in Microsoft Excel,
PDF file.

For operating the device:

Mains connection	230 V 2%/ + 15 %
Mains frequency	48-63 Hz
Power input	250 watts – 375 watts, depending on the model
Dimensions	approx. B 385 x D 275 x H 420 mm
Weight	approx. 9 kg

Technical data subject to change without notice

ULTRA X moisture analyzers are stand-alone units and not suitable for use in continuous production runs. We shall not accept any liability for incorrect readings!

Accessories:	Order no.:	Use:
Stainless steel drying tray	10000282	Sample carriers UX 3011/ 3031 (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 0.3 mm	H1000017	for placing on the drying tray
Foil press	10000062	for shaping aluminium foil

Software	DataBridge for transmitting data to a PC

Consumables:

Printing paper 58 mm thermal, stable for 10 years	10000234	for built-in printers
Infrared heater 250 W	H1000130	Spare part
Quartz heater 375 W	10000139	Spare part
Quartz heater 375 W HQ	10000149	Spare part

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Assembly ULTRA X 3011HQ

9. pan

8. pan holder

7. protective disk

6. pan holder connection

3. isulating ferrule

4. screening plates with reflector cup

2. cooling disk

1. protective hood