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# 784 KFP Titrino

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## Short instructions for use

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99.08 / sn



# 1 Getting started

This is a step by step introduction into the operation of the Titrino.

You learn how to go round with the Titrino and you get an idea of the possibilities that the Titrino offers you.

## 1.1 Principle of data input

<CONFIG>

```

configuration
>monitoring
>peripheral units
>auxiliaries
>RS232 settings COM
>RS232 settings COM2
>common variables
    
```

Press <STOP> if the Titrino is busy. It is now in the inactive standby state.

Then press the <CONFIG> key.

The first line indicates the "path", which means the place where you are right now: You pressed the <CONFIG> key and are now in the "configuration" inquiries.

In the next lines you find a list of the inquiry groups of key <CONFIG>. They are all marked with ">". This sign means that you get to the inquiries with <ENTER>.

The inquiry group ">monitoring" is inverted, which means that the cursor is placed on this line. You can move the cursor up and down with the <↑> and <↓> keys.

<↓>  
<ENTER>

Set the cursor to ">auxiliaries" and open this inquiry group with <ENTER>.

```

configuration
>auxiliaries
  dialog:          english
  date             1999-08-23
  time             15:23
  run number       0
  auto start       OFF
  start delay      0 s
    
```

The arrow in the lower right corner means that there are more inquiries. They appear if you move the cursor below.

Set the cursor to the inquiry "dialog:". You may select a different dialog language with the keys <←> or <→> (Key <→> "turns" forward, <←> backward).

<←> or <→>  
<ENTER>

Select any language and press <ENTER>.

Note the sign ":" in the text "dialog:". If you see this sign in the dialog text, you can always use the <←> or <→> keys to select a value.

Readjust the language to "english" again.

2x <QUIT>

Quit the inquiries in the <CONFIG> key pressing <QUIT> twice.

## 1.2 Karl Fischer titer determination

To facilitate the the use of the instrument, a certain number of tested titration methods is stored in the 784 Titrino.

Now, we would like to perform a water determination using these methods. Therefore, the titer of the Karl Fischer reagent has to be determined first. At the same time, you learn how to store the titer as a common variable for following titrations.

First, a completely equipped KF titration vessel (KF equipment 6.5609.000) has to be installed on your stirrer or Ti-Stand. Mount an Exchange Unit with KF reagent on the Titrino and connect a double platinum electrode to the Pol-input ("Pol").

### Recall a method from the method memory

<USER METH>  
<ENTER>

```

user methods
>recall method
method name: *****
  
```

<←> or <→>  
<ENTER>

```

KFT I(pol)      H2OTiter
  
```

Stored methods can always be recalled into the working memory. Recall the KFT Ipol method "H2OTiter" from the method memory.

Press <USER METH> and <ENTER> to go to ">recall method".

You can select the method "H2OTiter" with <←> or <→> or enter its name directly.

Recall the method with <ENTER>.

The mode (KFT Ipol) and the name of the method are displayed.

The method is now ready to work.

### Editing method parameters

<PARAM>

```
parameters
>control parameters
>titration parameters
>stop conditions
>statistics
>preselections
```

For a better understanding of the titration method, you can have a look at the control parameters and the titration parameters of the method that you have loaded. If necessary these can be edited.

Press the <PARAM> key.

<ENTER>

```
parameters
>control parameters
EP at U      250 mV
dynamics     100 nV
max. rate    max. ml/min
min. volume  incr. min ml
stop crit:   drift
stop drift   20 ml/min
```

Press <ENTER> to open the dialogue "control parameters".

Because the parameter settings are optimized for most water determinations, you do not need to change the parameters.

If you like to change any parameter however, move the cursor to the corresponding line with the <↓> key, enter the parameter (see page 1) and confirm the entry with <ENTER>.

<QUIT>

Press <QUIT> to quit the inquiry of the control parameters.

In the same way, you can edit the titration parameters and the stop conditions.

### Statistics calculation

<↓>  
<ENTER>

```
parameters
>statistics
status:      ON
mean         n= 5
res. tab:    original
```

Place the cursor on ">statistics". Press <ENTER> to go to this inquiry group.

The statistics calculations are switched on. Place the cursor on "mean" and enter n = 3, because we would like to calculate the mean of 3 single determinations. Confirm the entry with <ENTER>.

<↓>  
<3>  
<ENTER>  
2x <QUIT>

Quit the inquiry by pressing <QUIT> twice.

### Calculation of the titer: entry of a formula

<DEF>

```
def
>formula
>sil o calculations
>common variables
>report
>mean
```

You may calculate the titer with the endpoint.  
Press <DEF>.

Press <ENTER> to move on to the formula entry. The display now shows "RS?".  
Press "1", i.e. the first formula.

<ENTER>  
<1>

```
def
>formula
RS1=C00/EP1*C01
```

There is already stored a formula to calculate the titer (result 1) in the method. You could now edit the formula:

$RS1 = C00/EP1 * C01$   
titer = sample size of standard / end point \* factor  
  
factor = water content of the standard in mg/g

Note here the inscriptions in the right corner of the keys and the numbers. You can use mathematical operations, parentheses as well as the following symbols:

EP# EP's with 1-digit number, e.g. EP1.

RS# Results, e.g. RS1 could be used in a second formula.

C## Calculation values, e.g. C01 (factor in the titer calculation that depends on the standard that is used). C00 is reserved for the sample size. The meaning of the different calculation values is given on page 15.

You can delete the symbols one by one with <CLEAR>.

<ENTER>

Confirm the formula with <ENTER>.

```
def
>formula
RS1=C00/EP1*C01
RS1 text      Titer
RS1 decimal places  4
RS1 unit:      ng/ml
RS1 limit control: OFF
```

For the result output, a text is already entered.

The number of decimal places for the titer is 4.

The unit can be selected with <←> or <→> or entered as text.

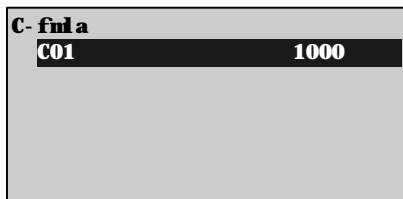
You do not need to change the entries and can quit the formula entry by pressing <QUIT> twice.

2x <QUIT>

To obtain the correct result for the titer, you have to adapt the calculation constant C01.

**Entry of the calculation constants**

<C-FMLA>



Press <C-FMLA> to enter the calculation values. The constants which have been used in the formula are requested:

C01: Factor for the calculation of the titer = 1000  
With this factor, the water content of the standard is entered:

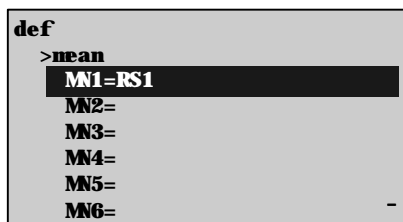
Standard used	Sample size in	Factor
water	g	1000
water	μL	density (H <sub>2</sub> O) = 1 g/mL
methanol	g	water content in mg/g
methanol	mL	water content in mg/mL
methanol	μL	0.001 * water content in mg/mL

<QUIT>

Press <QUIT> to quit the inquiry.

**Defining a common variable**

<DEF>  
<↓>  
<ENTER>



Press the <DEF> key and open the inquiry group ">mean".

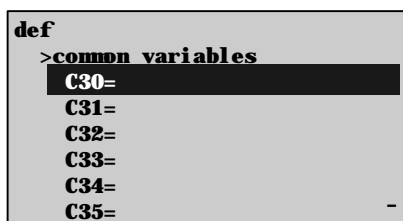
You see here that result RS1 is assigned to the mean value MN1.

What happens to this mean value?  
It is assigned to a common variable (see below).

<QUIT>

Quit the inquiry with <QUIT>.

<↑>  
<ENTER>



Open the inquiry group ">common variables" now.

Values that should be stored permanently for later use can be assigned to common variables. The values of the common variables are preserved for all methods, even during power ON/OFF, until they are overwritten or deleted.

Up to 10 common variables (C30...C39) are available.

<↓>

If you move the cursor to the last line, you see that the mean value MN1 is assigned to common variable C39. Not only mean values, but also results, endpoints or variables can be assigned.

2x <QUIT>

Quit the inquiry with <QUIT>.

### KF titer determination

**KFT I(pol) H<sub>2</sub>O Titer**

You are now ready to titrate..

Put 20 mL methanol (solvent, resp.) into the titration vessel, switch on the stirrer and press <START>.

<START>

**drift OK 3.2 ml/min**

Now, the solution is conditioned to the first endpoint defined in the method. When conditioning is terminated, "drift OK" is displayed.

In the meantime tare a syringe with a long needle filled with distilled water on a high precision balance.

<START>

The titration is started with <START>.

Now, the Titrino requests the sample size. Puncture the septum and add 2–3 drops of water. Weigh back the syringe.

Or you can add exactly 10 µL water using a micro-syringe. If you use a methanol standard, you need to adjust the calculation constants (see page 5).

Sample size  
<ENTER>

Enter the sample size in gram and confirm it with <ENTER>.

**drift 7.0 ml/min**  
**Titer 4.9372 ng/ml**

During the titration, the titration curve is displayed. The titration will be terminated when the endpoint is reached. A report will be printed on the connected printer. (If no printer is connected, error 42 appears. You can delete the print job with <QUIT>.)

After the titration, conditioning continues and the current drift is displayed.

see above

Perform two more titer determinations by pressing <START>, as soon as the solution is conditioned.

<STOP>

After the third titration you stop conditioning with <STOP>.

<CONFIG>  
 <↓>  
 <ENTER>  
 <↓>

Press the <CONFIG> key to open the inquiry ">common variables".

<b>configuration</b>		
>common variables		
<b>C34</b>	<b>0.0</b>	<b>-</b>
<b>C35</b>	<b>0.0</b>	
<b>C36</b>	<b>0.0</b>	
<b>C37</b>	<b>0.0</b>	
<b>C38</b>	<b>0.0</b>	
<b>C39</b>	<b>4.9862</b>	

If you move the cursor to the last line, you see that the mean value of the KF titer is assigned to common variable C39.

2x <QUIT>

Quit the inquiry with <QUIT>.

**Entry of the sample size**

<SMPL DATA>

In this method, the sample size is requested automatically after the start of the method. If you like to change the sample size, you can enter it with the <SMPL DATA> key.

<b>smpl data</b>	
<b>id#1 or C21</b>	
<b>id#2 or C22</b>	
<b>id#3 or C23</b>	
<b>smpl size</b>	<b>1.0 g</b>
<b>smpl unit:</b>	<b>g</b>

Enter it with the <SMPL DATA> key: Place the cursor to "smpl size" and enter the value. Confirm with <ENTER>.

<↓>

<ENTER>  
 <←> or <→>  
 <ENTER>

Select the unit for the sample size using the <←> or <→> keys and confirm with <ENTER>.

The result is recalculated.

**Delete a result from statistics calculation**

<PARAM>  
 <↓>  
 <ENTER>  
 <↓>  
 <←> or <→>  
 <ENTER>

You want to delete, e.g., the second result of your titer determination. Press the <PARAM> key and open the inquiry group ">statistics". Place the cursor on "res.tab:" and choose "delete n" with the keys <←> or <→>. Confirm with <ENTER>.

<2>

Enter "n= 2".

<b>parameters</b>		
>statistics		
<b>status:</b>		<b>ON</b>
<b>mean</b>	<b>n=</b>	<b>3</b>
<b>res. tab:</b>	<b>delete n</b>	
<b>delete</b>	<b>n=</b>	<b>2</b>

If you confirm your entry with <ENTER> now, the result of your second titer determination will be deleted.

<ENTER>  
 <QUIT>

Quit the inquiry with <QUIT>.

The mean and the standard deviation are recalculated.

If you have connected a printer, you can print a new result report using the keys <PRINT> <REPORTS> <ENTER> or a new statistics table, in which the deleted result is labeled with "\*" using <PRINT> <STATISTICS> <ENTER>.

## 1.3 Karl Fischer water determination

This method "KF" can be generally used for the determination of the water content of samples without previous blank value determination.

### Adjust calculation constants

Load the method KFT Ipol "KF" from the method memory.

<DEF>  
<ENTER>  
<1>  
<ENTER>

Press the <DEF> key and enter the formula inquiry to see, which calculation constants are used in the formula (see page 4).

```
def
>formula
RS1=EP1*C39*C01/C00/C02

RS1 text      Water
RS1 decimal places  2
RS1 unit:      %
RS1 limit control:  OFF
```

As you can see, the common variable C39 is used, i.e. for the calculation of the water content the previously determined titer is taken into account automatically (see page 7). Thus for different titration reagents, each titer can be stored as a separate common variable.

If the water content is calculated in % and the sample size is entered in g, the standard values C01 = 0.1 and C02 = 1 can be used. Otherwise the values can be adjusted according to the following table as described on page 5.

Unit RS	Sample size in..	C01	C02
%	g	0.1	1
%	mg	100	1
%	mL	0.1	Density of Sample
ppm	g	1000	1
ppm	mL	1000	Density of Sample
ppm	μL	1000 000	Density of Sample
mg/mL	g	Density of Sample	1
mg/mL	mL	1	1
g/L	g	Density of Sample	1
g/L	mL	1	1
mg	1	1	1
mL	1	1	1000*Density H <sub>2</sub> O
mg/pc	pc	1	1

With the keys <PRINT><→><ENTER> the formula and the calculation constants can be printed. Press the cursor key until "calc" is displayed on the right.

### KF titration

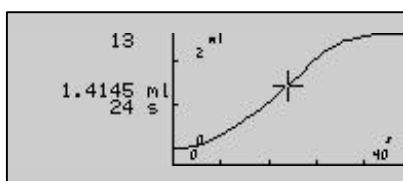
Exchange the used methanol against fresh one and perform a water determination of a moist solvent, as an example titration. Proceed as in the KF titer determination.

You can find some useful hints for the sample addition on page 21 of the Instructions for Use.

### Viewing the titration curve

<CURVE>

You can view the titration curve after the titration using the key <CURVE>.



With the keys <↑> and <↓> you can trace the curve. To the left volume and time of the current point are displayed. On the first line, you will find the index of the point.

<CURVE>

Quit the curve display with <CURVE>.

## 1.4 Printing reports

If you have a printer connected, you can select the report blocks to be printed out automatically at the end of the titration.

<DEF>  
<↓>  
<ENTER>  
<←> or <→>

Press <DEF> and place the cursor to ">report". Press <ENTER> to define the report output. (If you have your printer connected to COM2 press <ENTER> once again.)

```
def
>report
report COM: full; curve
```

Select the individual report blocks with the <←> or <→> keys. Use a ";" as delimiter between the report blocks. If you wish to print out a curve and a full result report, set "full;curve".

<ENTER>

With <CLEAR> you can delete individual report blocks.

2x <QUIT>

Confirm the entry with <ENTER> and quit the inquiries with <QUIT>.

Press <PRINT> <REPORTS> <ENTER> to print your reports. Your printout will look as follows:

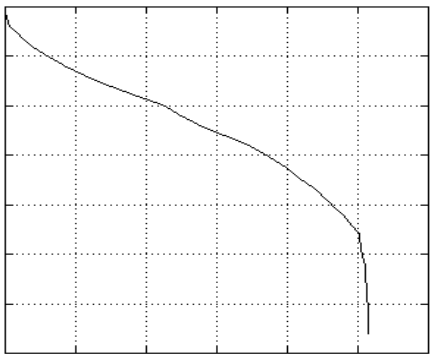
```
' fr
784 KFP Titrimo      02134      784.0010
user                sn
date 1999-08-21    time 17:40      4
KFT Ipol           KF
snpl size          0.879 g
EP1                2.5725 ml
Water              1.44 %
Titer              4.9372 ng/ml
                  mean( 3)  +/-s      s/%
Water              1.46    0.027 %    1.86
device label       Titr 1      sign:
=====
```

Identification of report type (full result report)  
Instr. type with identification and program version  
User (only if entered)

Calculated result

Statistics

Device label (only if entered)

```
' cu
784 KFP Titrimo      02134      784.0010
user                sn
date 1999-08-21    time 17:40      4
                  KFT Ipol      KF
5.0 s/div          dV=0.5 ml/div
0.00              3.00

=====
```

Identification of report type (curve)

Scaling of time and volume axis

Curve

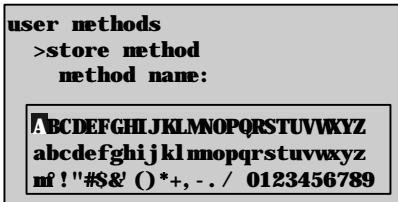
## 1.5 Storing methods

You learn how to operate the method memory

### Storing a method in the method memory

```
<USER METH>
  <↓>
  <ENTER>
```

Press <USER METH>, place the cursor to ">store method" and press <ENTER>.



Press <CLEAR> to delete the existing method name. Open text entry with key <ABC>. A field with letters and symbols appears. You can select a letter with the cursor keys and confirm this letter with <ENTER>. The letter then appears in the input field of the method name.

Entries <ENTER>

Enter an identification for your method. If you made a typing error, you can delete the characters one by one with <CLEAR>.

<QUIT>

Quit the text input with <QUIT> when you completed your name.

<ENTER>

Confirm the name with <ENTER>. The method will be stored in the method memory.

The method runs now under the new name.

A list of contents of the method memory can be printed with the key sequence <PRINT><USER METH><ENTER>.

'um			
784	KFP Titrimo	02134	784.0010
date	1999-08-20	time	16:54
user methods			bytes
KFT	Ipol	H2OTiter	152
KFT	Ipol	TarTiter	152
KFT	Ipol	Blank_KF	134
KFT	Ipol	KF-Blank	208
KFT	Ipol	KF	172
KFT	Ipol	5Titer	152
KFT	Ipol	5Deter	172
KFT	Ipol	5Deter-B	208
KFT	Ipol	2Titer	152
KFT	Ipol	2Deter	172
KFT	Ipol	2Deter-B	208
KFT	Ipol	1Titer	152
KFT	Ipol	1Deter	172
KFT	Ipol	1Deter-B	208
KFT	Ipol	KetTiter	152
KFT	Ipol	KetDeter	172
KFT	Ipol	KetDet-B	208
KFT	Ipol	BrNumber	212
		remaining bytes	96716
		-----	

## 2 Titration parameters

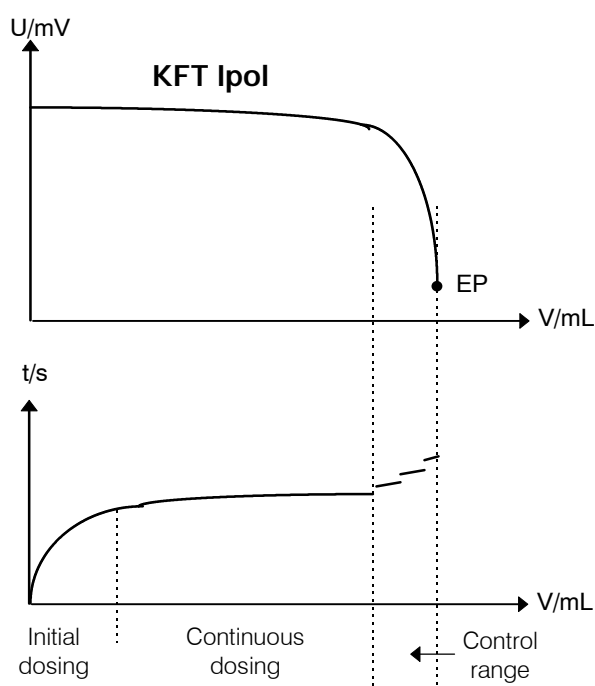
This chapter gives you a survey over the titration parameters. The standard values are printed in bold face in the following tables.

If you are looking for more information to the different quantities, you will find the display text as a keyword in the index of the Instructions for Use.

### 2.1 The mode KFT

The control parameters can be set according to your samples. The default parameters are already set to get satisfactory results. Optimize the control parameters for specific samples only.

During the titration, reagent dosing is carried out in 3 phases:



1. Initial dosing:  
Here the dosing rate increases constantly up to "max.rate".
2. Continuous dosing:  
Dosing is performed at the maximum rate "max.rate" until the control range (dynamics) is reached.
3. Control range (dynamics):  
In this range, dosing is performed in single steps. The last dosing steps are controlled by the parameter "min.volume incr.".

#### Remarks:

- Titer determination should have the same modes and the same parameters as the sample titrations.
- In most cases the preset default parameters provide precise and reproducible results.
- Ipol gives relatively steep curves. They are flatter with Upol.

## 2.2 Mode KFT, parameters

Display	Meaning	Input range
<b>&gt;control parameters</b> <b>EP at ...</b>  <b>dynamics</b>  <b>mx. rate</b> <b>mn. volume incr.</b> <b>stop crit:</b> <b>stop drift</b> <b>t(delay)</b> <b>stop time</b>	Controlling parameters for KFT. Endpoint for I <sub>pol</sub> . Endpoint for U <sub>pol</sub> Distance from EP where constant dosing stops and controlling begins. Maximum dosing rate. Minimum volume increment Type of stop criteria. Titration stops if stop drift is reached. Stop if there is no dosing during t(delay). If t(delay) is "INF": stop time.	U: -2000 ... 250...2000 mV I: -200.0... 25.0...200.0 µA U: 1...100...2000 mV I: 0.1...10...200.0 µA 0.01...150 mL/min, <b>max.</b> 0.1...9.9 µL, <b>min</b> <b>drift</b> , time 1...20...999 µL/min 0...10...999 s, INF 0...999999 s, OFF
<b>&gt;titration parameters</b> <b>titr. direction:</b>  <b>pause 1</b> <b>start V:</b> <b>start V</b> <b>factor</b>  <b>dos. rate</b> <b>pause 2</b> <b>extr. time</b> <b>I(pol)</b> <b>U(pol)</b> <b>electrode test:</b> <b>temperature</b> <b>time interval</b>	General titration parameters. +: Titration to higher voltage or current. auto: Direction is set automatically. Waiting time <b>before</b> start volume. Type of start volume: absolute or relative. Volume for <b>absolute</b> start volume. Factor for calculation of <b>relative</b> start volume: factor * smpl size. Dosing rate for start volume. Waiting time <b>after</b> start volume. Extraction time. Polarization current for I <sub>pol</sub> or -voltage for U <sub>pol</sub> in 10 mV-intervals. Performing of electrode test Titration temperature. Time interval for measured value acquisition.	+, -, auto  0...999999 s abs., rel., OFF 0...999.99 mL 0...±999999  0.01...150 mL/min, <b>max.</b> 0...999999 s 0...999999 s -127...50...127 µA or. -1270...400...1270 mV ON, OFF -170.0...25.0...500.0 °C 1...2...999999 s
<b>&gt;stop conditions</b> <b>stop V:</b> <b>stop V</b> <b>factor</b>  <b>filling rate</b>	Type of stop volume: absolute or relative. Volume for <b>absolute</b> stop volume. Factor for calculation of <b>relative</b> stop volume: factor * smpl size. Filling rate after the titration.	abs., rel., OFF 0...99.99...9999.99 mL 0...±999999  0.01...150 mL/min, <b>max.</b>
<b>&gt;statistics</b> <b>status:</b> <b>mean</b> <b>n=</b> <b>res. tab:</b> <b>delete</b> <b>n=</b>	Status of statistics calculation. Number n of single values for statistics. Result table for statistics calculation. Delete data from sample number n.	ON, OFF 2...20 original, delete n, delete all 1...20
<b>&gt;preselections</b> <b>conditioning:</b> <b>display drift:</b> <b>drift corr:</b> <b>drift value</b> <b>req. ident:</b> <b>req. smpl size:</b> <b>limit smpl size:</b> <b>oven:</b>  <b>activate pulse:</b>	Automatic conditioning of titration vessel. Display of drift during conditioning. Type of drift correction. Value for manual drift correction. Request of identifications after start. Request of sample size after start. Limit control of sample size. RS-COM of Titrino where the oven is connected. Pulse output on I/O line L6.	ON, OFF ON, OFF auto, man., OFF 0.0...99.9 mL/min id1, id1 & 2, all, OFF value, unit, all, OFF ON, OFF COM1, COM2, no  first, all, cond., OFF

## 2.3 Calculations

The results are calculated with the formulas given in the method. For the calculation, the raw values, determined in the method (EP's and C variables), are available.

The results and the raw values can be assigned for further calculations, e.g. for statistics or as common variables.

### Formula input and assignments, key <DEF>

Display	Meaning	Input range
<b>&gt;formula</b> <b>RS?</b> <b>RS1=EP1*C01/C00</b>  <b>RS1 text</b> <b>RS1 decimal places</b> <b>RS1 unit:</b>   <b>RS1 limit control:</b> <b>RS1 low lim</b> <b>RS1 up lim</b> <b>RS1 L13 output:</b>	Input of formula. Enter result number. Enter formula by means of 3 <sup>rd</sup> functions of keyboard. Text for result output. Number of decimal places for result output. Select result unit.   Limit control of the result. Lower limit for RS1. Upper limit for RS1 Output on line L13 if the result is out of limits.  Enter values of calculation variables with <C-FMLA>.	1...9  <b>RS1</b> or up to 8 ASCII characters 0...2...5 %, ppm, g/L, mg/mL, mg/pc, mol/L, mmol/L, g, mg, mL, s, mL/min, no unit or up to 6 ASCII characters  ON, OFF 0.0...999 999 0.0...999 999 OFF, active, pulse
<b>&gt;silco calculations</b>  <b>C24=</b> <b>C25=</b> <b>match id:</b>	Allocations for silo calculation, see page 41 of the Instructions for Use. Enter values to be stored in the silo memory. Indication which id's must coincide for the statistical evaluation in the silo memory.	RSX, EPX, CXX  id1, id1 & 2, all, OFF
<b>&gt;common variables</b> <b>C30=</b>	Allocations of common variables C30...C39. Assign RSX, EPX, CXX, or MNX.	RSX, MNX, EPX, CXX
<b>&gt;report</b>  <b>report COM1:</b> <b>report COM2:</b>	Selection of report blocks for data output at COM1. Depends on the selected mode. If you wish several reports, use ";" as separator. As for COM1.	param, full, short, mplist, curve, scalc full, scalc srt, calc, ff
<b>&gt;mean</b> <b>MN1=</b>	Allocations for statistics. Assign RSX, EPX, or CXX.	RSX, EPX, CXX

### Meaning of the calculation variables

C variables are

- determined by the method (C24...C27, C4X)
- entered as sample specific data (C00, C21...C23)
- given as fixed constants in the methods (C01...C19)

Variable	Meaning
<b>C00</b>	Sample size, key <SMPL DATA>.
<b>C01. . . C19</b>	Method specific calculation values, such as molecular mass, factors, key <C-FMLA>.
<b>C21. . . C23</b>	Sample specific calculation values, such as dilution factors, key <SMPL DATA>.
<b>C24, C25</b>	Variables for storing determination results in the silo memory.
<b>C26, C27</b>	Means from silo calculations (C26 is mean of C24 and C27 is mean of C25).
<b>C30. . . C39</b>	Common variables, e.g. for titer.
<b>C40</b>	Initial measured value of the sample, last measured value for MEAS.
<b>C41</b>	End volume.
<b>C42</b>	Determination time.
<b>C43</b>	Volume drift with conditioning.
<b>C44</b>	Temperature.
<b>C45</b>	Dispensed start volume.

### Sample data, key <SMPL DATA>

- Sample identifications or sample specific calculation values C21...C23
- Sample size C00

For working with the silo memory, see page 17.

Display	Meaning	Input range
<b>id#1 or C21</b> <b>id#2 or C22</b> <b>id#3 or C23</b> <b>snpl size</b> <b>snpl unit:</b>	Inquiries with silo = OFF (LED "silo" is OFF): } Sample identification. Can be used as } sample specific calculation values.  Sample size Unit of sample size	up to 8 ASCII characters or 0...±999999  -999999...1...999999 g, mg, mL, µL, pc, no unit or up to 5 ASCII characters

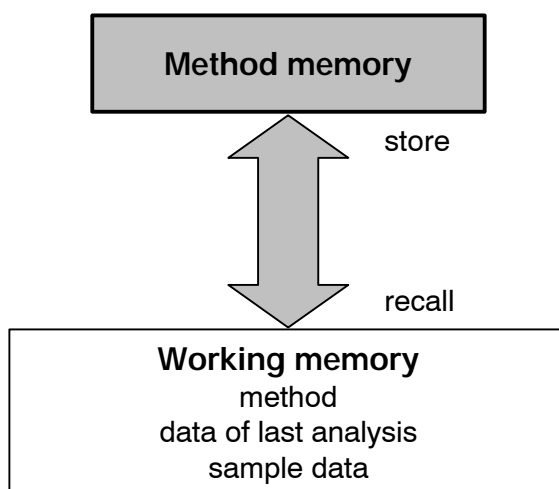
## 3 Other functions

This chapter gives you a survey over other functions of the Titrimo.

If you are looking for more information to the different quantities, you will find the display text as a keyword in the index of the Instructions for Use.

### 3.1 Method memory

Methods can be stored in the method memory:



#### Method memory, key <USER METH>

Display	Meaning	Input range
>recall method method name:	Recall method from the method memory to the working memory.	up to 8 characters
>store method method name:	Store method from the working memory to the method memory.	up to 8 characters
>delete method method name:	Delete method from the method memory.	up to 8 characters

### 3.2 User name, key <USER>

If a user name is entered it will be printed in the print-out.

Display	Meaning	Input range
<b>name:</b>	User name. Select a name with keys <<-> or <->> or enter the name directly (see text entry, page 11).	up to 10 ASCII characters
<b>&gt;delete name:</b>	Deletes a user name.	up to 10 ASCII characters

### 3.3 Sample data, keys <SMPL DATA> and <SILO>

In the silo memory sample data can be stored on reserve. For working without the silo memory see page 15.

Press the key <SILO> for working with the silo memory, and the key <SMPL DATA> to input data.

Display	Meaning	Input range
<b>&gt;edit silo lines</b> <b>silol line</b> <b>method:</b> <b>id#1 or C21</b> <b>id#2 or C22</b> <b>id#3 or C23</b> <b>snpl size</b> <b>snpl unit:</b>	Input for the silo memory: Silo line number. Method name. } Sample identification. Can be used as specific calculation values. Sample size Unit of sample size.	1...255 up to 8 ASCII characters up to 8 ASCII characters -999999...1...999999 g, mg, mL, µL, pc, no unit or up to 5 ASCII characters
<b>&gt;delete silo lines</b> <b>delete line n</b>	Delete individual silo lines. Line number of the line to be deleted.	1...255, OFF
<b>&gt;delete all silo lines</b> <b>delete all:</b>	Delete all silo lines. Confirmation.	ON, OFF
<b>cycle lines:</b>  <b>save lines:</b>	With "ON", worked off silo lines will be copied to the highest line of the silo memory. Determination results will be stored as C24 or C25 in the silo memory according to the allocations in the methods, see page 14.	ON, OFF  ON, OFF

### 3.4 Configuration, key <CONFIG>

Display	Meaning	Input range
<b>&gt;monitoring validation:</b> <b>time interval</b> <b>time counter</b> <b>service:</b> <b>next service</b> <b>system test report:</b>	Monitoring functions Validation of Titrino. Time interval for the validation. Time elapsed since the validation. Service of instrument. Date for the next service. Print-out of the system test report after switching on the Titrino.	ON, OFF 1...365...9999 d 0...9999 d ON, OFF YYYY-MM-DD ON, OFF
<b>&gt;peripheral units</b> <b>send to COM1:</b> <b>send to COM2:</b> <b>man. reports to COM</b> <b>balance:</b>  <b>stirrer control:</b> <b>remote box:</b> <b>keyboard:</b>  <b>barcode:</b>	Settings of peripheral units. Selection of printer at COM1. as for COM1. Output of manually triggered reports. Selection of balance.  Stirrer control in titration sequences. Connection of a remote box. Type of the PC keyboard connected to the remote box. Target for data entered by a barcode reader.	Epson, Seiko, Citizen, HP, IBM  1, 2, 1&2 Sartorius, Mettler, Mettler AT, AND, Precisa ON, OFF ON, OFF US, deutsch, francais, espanol, schweiz. input, method, id1, id2, id3, smpl size
<b>&gt;auxiliaries dialog:</b>  <b>date</b> <b>time</b> <b>run number</b> <b>auto start</b> <b>start delay</b> <b>result display:</b> <b>dev. label</b> <b>program</b>	General settings. Selection of dialog language.  Current run number for result output. Automatic starts of titrations. Waiting time before start of titration. Result display at the end of determination. Device label. Program version.	english, deutsch, français, español, italiano, portugese, svenska YYYY-MM-DD HH:MM 0...9999 1...9999, OFF 0...999999 s bold, standard up to 8 characters read only
<b>&gt;RS232 settings COM1</b> <b>baud rate:</b>  <b>data bit:</b> <b>stop bit:</b> <b>parity:</b> <b>handshake:</b>	RS232 settings for COM1. Baud rate.  Data bit. Stop bit. Parity. Handshake.	300,600,1200,2400, 4800, 9600, 19200, 38400, 57600, 115200 7, 8 1, 2 none, odd, even HWs, SWchar, SWline, none
<b>&gt;RS232 settings COM2</b>	as for COM1.	
<b>&gt;common variables</b>	Values of common variables C30...C39.	

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