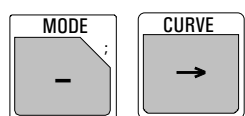
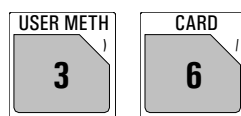


Mode selection



Press key <MODE> until the desired mode is displayed, press <ENTER>, select desired measured quantity with the cursor keys <→> or <←>, and confirm with <ENTER>.



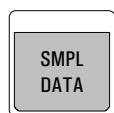
Recall method from internal method memory (key <USER METH>) or from card (key <CARD>):
> Recall method <ENTER>
Select method name with <→> or <←> or by entering its name.

Modes:

KFT Ipo1, Upo1
SET pH, U, Ipo1, Upo1
MEAS pH, U, Ipo1, Upo1, T
CAL
TIP

Karl Fisher Titration (Determination of water content).
Set Endpoint Titration.
MEASuring.
CALibration.
Titration-Procedure. Linking of various commands and methods to a titration procedure.

Sample data



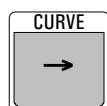
Input for sample data:

- Sample identification. Can be used as sample specific calculation values
- Sample size

Inquiries with silo = OFF (LED "silo" is OFF).

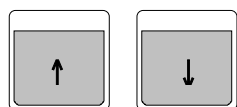
Display	Initial value	Meaning	Input range
id#1 or C21 id#2 or C22 id#3 or C23		Sample identification. Can be used as sample specific calculation values C21...C23.	up to 8 ASCII characters
smp1 size smp1 unit:	1.0 g g	Sample size, value C00. Unit of sample size.	0... ±999999 g, mg, mL, µL, pc or up to 5 ASCII characters

Display of the curve



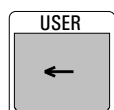
Display of the curve.

After the titration (in the ground state) you can switch between curve and result display using the key <CURVE>.



You can trace the curve with the keys <↑> and <↓>. In the text field, to the left of the curve, the index of the current measured value is displayed in the first line. In the subsequent lines, the corresponding measured values are shown.

User name

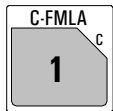
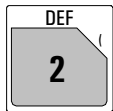


Manage user names.

The user name is printed out in the report.

Display	Initial value	Meaning	Input range
name:		Enter the name directly or select it with the keys <←> or <→>.	up to 10 ASCII characters
>delete		Delete user name	
name:		Enter the name directly or select it with the keys <←> or <→>.	

Calculations and definitions for data output



Input of formula.
Preselection of automatic report output at the end of a determination.
Allocations of values for statistics, common variables, silo calculations and temporary variables (TIP calculations).

Display	Initial value	Meaning	Input range
>formula		Input of formulas	
RS? RS1=EP1*C01/C00		Enter formula number. Enter formula by means of 3 rd functions of keyboard and confirm with <ENTER>. CXX are calculations variables, see below.	1...9
RS1 text	RS1	Text for result output.	RS1 or up to 8 ASCII characters
RS1 decimal places	2	Number of decimal places for result output.	0...5
RS1 unit:	%	Selection of result unit. Select the unit with <→> or <←> or enter a unit.	%, ppm, g/L, mg/mL, mol/L, mmol/L, g, mg, mL, mg/pc, s, mL/min, none or up to 6 ASCII characters
RS1 limit control: OFF		Limits for the result may be entered. Enter the values of calculation variables C01...C19 with <C-fmla>.	ON, OFF
>silo calculations		Allocations for silo calculations	
>common variables		Allocations for common variables	
>report		Selection of report blocks for data output	
report COM1:		Output to COM1. Identical for COM2. Press <→> or <←> for selection. If you wish several reports, use ";" as separator.	param, calib, full, short, mplist, curve, scalc full, scalc srt, calc, ff
>mean		Allocations for statistics calculations	
>temporary variables		Allocations for calculations in TIP	

Meaning of the calculation variables CXX

Variable	Meaning
C00	Sample size, key <SMPL DATA>.
C01...C19	Method specific calculation values, such as molecular mass, factors, key <C-FMLA>.
C21...C23	Sample specific calculation values, such as dilution factors, identifications, key <SMPL DATA>.
C24, C25	Variables for storing determination results in the silo memory.
C26, C27	Means from silo calculations (C26 is mean of C24 and C27 is mean of C25).
C30...C39	Common variables, i.e. for titer.
C40	Initial measured value of the sample, in MEAS last measured value.
C41	End volume.
C42	Determination time.
C43	Volume drift for KFT and SET with conditioning.
C44	Temperature.
C45	Dispensed start volume.
C46	Asymmetry-pH (calibration).
C47	Electrode slope (calibration).
C48	Volume at maximum voltage in the curve.
C49	Volume at minimum voltage in the curve.
C70...C79	Temporary variables for calculations in TIP.

Configuration



Settings of peripheral units
 General settings
 Settings of RS232 interface, values of the common variables
 Settings for dosing units

Display	Initial value	Meaning	Input range
>monitoring			
Monitoring functions			
validation:	OFF	Monitoring of a time interval for instrument validation.	ON, OFF
calibration:	OFF	Monitoring of a time interval for pH calibration.	ON, OFF
service:	OFF	Monitoring of the date for the next instrument service.	ON, OFF
system test report:	OFF	Print-out of a system test report after switching on.	ON, OFF
>peripheral units			
Settings of peripheral units			
send to COM1:	IBM	Selection of printer at COM1. Identical for COM2.	Epson, Seiko, Citizen, HP, IBM
man.reports to COM:	1	Output of manually triggered reports.	1, 2, 1&2
balance:	Sartorius	Selection of balance.	Sartorius, Mettler, Mettler AT, AND, Precisa
stirrer control:	OFF	Stirrer control in the titration sequences.	ON, OFF
remote box:	OFF	Connection of a remote box.	ON, OFF
keyboard:	US	Type of connected PC keyboard.	US, Deutsch, français, espanol, schweiz.
barcode:	input	Target of data from the barcode reader. "input" means current input field.	input, method, id1, id2, id3, smpl size
>auxiliaries			
General settings			
dialog:	english	Selection of dialog language.	english,deutsch,français,español, portugese, italiano, svenska
date	YYYY-MM-DD		
time	hh:mm		
run number	0	Current run number for result output.	0...999999
auto start	OFF	Automatic starts of titrations.	1...9999, OFF
start delay	0 s	Waiting time before start of titration.	0...999999 s
result display:	bold	Result display at the end of the determinations.	bold, standard
device label		Device label.	8 ASCII characters
program	758.0022	Program version.	read only
>RS232 settings COM1			
RS232-sttings for COM1. Identical for COM2.			
baud rate:	9600	Baud rate.	300,600,1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
data bit:	8	Data bit.	7, 8
stop bit:	1	Stop bit.	1, 2
parity:	none	Parity.	none, odd, even
handshake:	HWS	Handshake.	HWS, SWchar, SWline, none
>common Variables			
Values of common variables			
>prep.dosing elements			
Prep. of titration burets			

Parameters for KFT

Display	Initial value	Meaning	Input range
>control parameters		Control parameters for EP	
EP at U	250 mV	Preset endpoint.	Ipol: 0... ±2000 mV Upol: 0... ±200.0 µA
dynamics	100 mV	Distance from EP where constant dosing should stop and controlling begins.	Ipol: 1...2000 mV Upol: 0.1...200.0 µA
max.rate	max. ml/min	Maximum dosing rate.	0.01...150 mL/min, max.
min.volume incr.	min µl	Minimum volume increment.	0.1...9.9 µL, min.
stop crit:	drift	Type of stop criteria.	drift, time
stop drift	20 µl/min	Titration stops if stop drift is reached.	1...999 µL/min
t(delay)	10 s	Titration stops if there is no dosing during t(delay).	0...999 s, INF
stop time	OFF s	If t(delay) is "INF" stop after at time.	0...999999 s, OFF
>titration parameters		General titration parameters	
titr.direction:	-	+/-: Titration to higher/lower voltage or currents auto: Direction is set automatically.	+, -, auto
pause 1	0 s	Waiting time <i>before</i> start volume.	0...999999 s
start V:	OFF	Type of start volume: absolute or relative.	abs., rel., OFF
start V	0.00 ml	Volume for <i>absolute</i> start volume.	0...999.99 mL
factor	0	Factor for <i>relative</i> start volume: factor * smpl size	0... ±999999
dos.rate. max.	.ml/min	Dosing rate for start volume.	0.01...150 mL/min, max.
pause 2	0 s	Waiting time <i>after</i> start volume.	0...999999 s
extr.time	0 s	Extraction time.	0...999999 s
dos.element:	internal D0	Selection of dosing unit.	internal D0, external D1/D2
I(pol)	50 µA	Polarization current.	-127...127 µA
U(pol)	400 mV	Polarization potential.	-1270...1270 mV
electrode test:	OFF	Electrode test.	ON, OFF
temperature	25.0 °C	Titration temperature.	-170.0...500.0 °C
time interval	2 s	Time interval for data acquisition.	1...999999 s
>stop conditions		Stop conditions for titration	
stop V:	abs.	Type of stop volume.	abs., rel., OFF
stop V:	99.99 ml	Volume for <i>absolute</i> stop volume.	0...9999.99 mL
factor	999999	Factor for <i>relative</i> stop volume: factor * smpl size.	0... ±999999
filling rate max.	ml/min	Filling rate.	0.01...150 mL/min, max.
>statistics		Statistics calculation	
status:	OFF	Status of statistics calculation.	ON, OFF
mean	n= 2	Number n of single values for statistics calculation.	2...20
res.tab:	original	Result table for statistics calculation.	original, delete n, delete all
delete	n= 1	Delete data from sample number n.	1...20
>preselections		Preselections for the sequence	
conditioning:	OFF	Automatic conditioning of titration vessel.	ON, OFF
display drift:	ON	Display of drift during conditioning.	ON, OFF
drift corr:	OFF	Type of drift correction.	auto, man., OFF
drift value	0 µl/min	Value for manual drift correction.	0.0...99.9 µL/min
req.ident:	OFF	Request of identifications after start of titration.	id1, id1 & 2, all, OFF
req.smpl size:	OFF	Request of sample size after start of titration.	value, unit, all, OFF
limit smpl size:	OFF	Limit control of sample size entries.	ON, OFF
Oven:	no	Connection of a KF oven	COM1, COM2, no
activate pulse:	OFF	Pulse output on I/O line L6.	first, all, cond., OFF

Parameters for SET

Display	Initial value	Meaning	Input range
>SET1		Control parameters for EP1	
EP at pH	OFF	Preset EP1.	pH: 0.00...±20.00, OFF U, Ipol: 0... ±2000 mV, OFF Upol: 0.0... ±200.0 µA, OFF
dynamics	OFF	Distance from EP where constant dosing should stop and controlling begins.	pH: 0.01...20.00, OFF U, Ipol: 1... 2000 mV, OFF Upol: 0.1...200.0 µA, OFF
max.rate	10.0 ml/min	Maximum dosing rate.	0.01...150 mL/min, max.
min.rate	25.0 µl/min	Minimum dosing rate.	0.01...9999 µL/min
stop crit: stop drift t(delay) stop time	drift 20 µl/min 10 s OFF s	Type of stop criteria. Titration stops if stop drift is reached. Titration stops if there is no dosing during t(delay). If t(delay) is "INF" stop after at time.	drift, time 1...999 µL/min 0...999 s, INF 0...999999 s, OFF
>SET2		Parameters for EP2. Identical as for EP1.	
>titration parameters		General titration parameters	
titr.direction:	auto	auto: Direction is set automatically. +: Titration to higher pH or voltage.	+, -, auto
pause 1	0 s	Waiting time <i>before</i> start volume.	0...999999 s
start V: start V factor dos.rate. max.	OFF 0.00 ml 0 .ml/min	Type of start volume: absolute or relative. Volume for <i>absolute</i> start volume. Factor for <i>relative</i> start volume: factor * smpl size Dosing rate for start volume.	abs., rel., OFF 0...999.99 mL 0... ±999999 0.01...150 mL/min, max.
pause 2	0 s	Waiting time <i>after</i> start volume.	0...999999 s
extr.time	0 s	Extraction time.	0...999999 s
dos.element:	internal D0	Selection of dosing unit.	internal D0, external D1/D2
meas. input:	1	Measuring input for pH and U.	1, 2, diff.
temperature	25.0 °C	Titration temperature.	-170.0...500.0 °C
time interval	2 s	Time interval for data acquisition.	1...999999 s
>stop conditions		Stop conditions for titration	
stop V: stop V: factor	abs. 99.99 ml 999999	Type of stop volume. Volume for <i>absolute</i> stop volume. Factor for <i>relative</i> stop volume: factor * smpl size.	abs., rel., OFF 0.00...9999.99 mL 0... ±999999
filling rate max.	.ml/min	Filling rate.	0.01...150 mL/min, max.
>statistics		Statistics calculation	
status: mean res.tab: delete	OFF n= 2 original n= 1	Status of statistics calculation. Number n of single values for statistics calculation. Result table for statistics calculation. Delete data from sample number n.	ON, OFF 2...20 original, delete n, delete all 1...20
>preselections		Preselections for the sequence	
conditioning: display drift: drift corr: drift value	OFF ON OFF 0 µl/min	Automatic conditioning of titration vessel. Display of drift during conditioning. Type of drift correction. Value for manual drift correction.	ON, OFF ON, OFF auto, man., OFF 0.0...99.9 µL/min
req.ident:	OFF	Request of identifications after start of titration.	id1, id1 & 2, all, OFF
req.smpl size:	OFF	Request of sample size after start of titration.	value, unit, all, OFF
limit smpl size:	OFF	Limit control of sample size entries.	ON, OFF
activate pulse:	OFF	Pulse output on I/O line L6.	first, all, cond., OFF

Parameters for MEAS

<i>Display</i>	<i>Initial value</i>	<i>Meaning</i>	<i>Input range</i>
>measuring parameters		Measuring parameters	
signal drift	OFF mV/min	Drift criterion for measured value acquisition.	pH, U, I _{pol} : 0.5...999 mV/min, OFF U _{pol} : 0.05...99.9 µA/min, OFF T: 0.5...999 °C/min, OFF
equibr.time	OFF s	Waiting time for measured value acquisition.	0...9999s, OFF
meas.input:	1	Measuring input for pH and U.	1, 2, diff.
I(pol)	1 µA	Polarization current.	-127...127 µA
U(pol)	400 mV	Polarization potential.	-1270...1270 mV
electrode test:	OFF	Electrode test.	ON, OFF
temperature	25.0 °C	Temperature.	-170...500.0 °C
time interval	2 s	Time interval for measured value acquisition.	1...999999 s
>statistics		Statistics calculation	
status:	OFF	Status of statistics calculation.	ON, OFF
mean	n= 2	Number n of single values for statistics calculation.	2...20
res.tab:	original	Result table for statistics calculation.	original, delete n, delete all
delete	n= 1	Delete data from sample number n.	1...20
>preselections		Preselections for the sequence	
req.ident:	OFF	Request of identifications after start of titration.	id1, id1 & 2, all, OFF
req.smpl size:	OFF	Request of sample size after start of titration.	value, unit, all, OFF
limit smpl size:	OFF	Limit control of sample size entries.	ON, OFF
activate pulse:	OFF	Pulse output on I/O line L6.	ON, OFF

Parameters for CAL

<i>Display</i>	<i>Initial value</i>	<i>Meaning</i>	<i>Input range</i>
>calibration parameters		Calibration parameters	
meas.input:	1	Measuring input.	1, 2, diff.
cal.temp.	25 °C	Calibration temperature.	-20...120.0 °C
Puffer #1 pH	7.00	pH value of first buffer (up to 9 buffers).	0... ±20, OFF
signal drift	2.0 mV/min	Signal drift for measured value acquisition.	0.5...999 mV/min, OFF
equibr.time	110 s	Equilibration time.	0...9999 s, OFF
electr.id		Electrode identification.	up to 8 characters
sample changer cal:	OFF	Calibration with sample changer.	ON, OFF
activate pulse:	OFF	Pulse output on the I/O line L6.	all, first, OFF
>statistics		Statistics calculation	
status:	OFF	Status of statistics calculation.	ON, OFF
mean	n= 2	Number n of single values for statistics calculation.	2...20
res.tab:	original	Result table for statistics calculation.	original, delete n, delete all
delete	n= 1	Delete data from sample number n.	1...20