

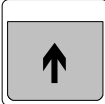
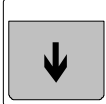
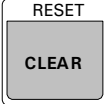

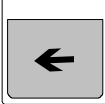
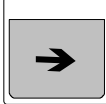
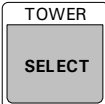




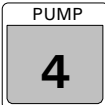


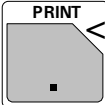
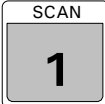




Manual Operation			Normal state
 	Lift position Raises or lowers the lift of the active tower to rest position (HOME) or work position (END).	 	Lift control Raises or lowers the lift of the active tower.
 	Initialize sample changer Initializes sample changer and dosing drives (RESET) or resets sample changer to initial position (ENDSEQ).	 	Shifting the rack Shifts the rack by one position to the left (anticlockwise) or to the right (clockwise).
	Changing the active tower Changes the active tower. The active tower is displayed by the 'TOWER 1' and 'TOWER 2' LEDs.		Stop Stops all current changer functions.
Key	Display	Entry range	Function
	LIFT : 1 : rest mm rest, work, rinse, shift, special, 0...325 mm		Lift control Raises or lowers the lift of the active tower to the specified position.
	MOVE 1 : sample sample, spec.1...8, 1...999		Moving a beaker Shifts the rack to place the specified beaker to the active tower.
	SAMPLE : = 1 1...999		Definition of the first sample position of a series Defines the rack position of the first sample beaker of a series.
	PUMP on/off no. ? 1...2		Pump control Switches on/off the selected pump of the active tower.
	STIR on/off no. ? 1...4		Stirrer control Switches on/off a stirrer.
	DOS: 1 : 1 ml Dosing unit 1...12, * Volume/Function ±0.001...999.999 ml, fill, release, prepar., empty, eject, adjust, level		Dosimat / Dosino control Controls a connected dosing drive. Enter a volume to be dispensed or select a function to execute (only 'fill' with 685 Dosimat). With the Dosino 700, also negative volumes can be dispensed i.e. the solution can be aspirated.
	PRINT: config config, param, usermeth, all		Print a report Prints out a sample changer report.
	SCN:Rm : 00000000 Interface Signal/Data Rm 14 x 1,0 or * RS 14 ASCII-characters		Interface scan Displays the state of the remote control lines (Input0...7) or the received data of the serial interface (RS232).
	CTL:Rm : INIT Interface Signal/Data Rm 14 x 1,0 or * RS 14 ASCII-characters		Interface control Sends the specified signal via remote control lines (Output0...13) in order to control (e.g. start) peripheral devices or transmits data via serial interface (RS232). <SELECT>-options see sample changer commands.

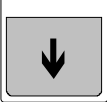


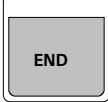
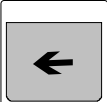
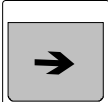
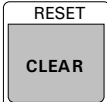

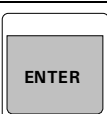
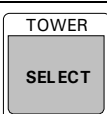

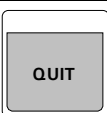
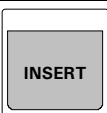


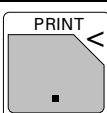
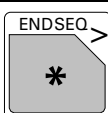


Manual Operation

Continued

		Definition of various settings Defines basic settings of stirrers, dosing units, lifts or rack . Roll-up selection; press <DEF>-key several times.		
Display	Default value	1. Parameter	2. Parameter	Function
STIRRATE	1 3	Stirrer 1...4	Rate 1...15	Stirring rate
DOSRATE	1 160	Address 1...12	Rate 0.01...160 ml/min	Dosing rate
FILLRATE	1 160	Address 1...12	Rate 0.01...160 ml/min	Filling rate
LIFTRATE	1 25 mm/s	Tower 1,2	Rate 3...25 mm/s	Lift rate
SHIFTRATE : auto.	20	Direction auto., +, -	Rate 3...20 w/s	Shift direction and shift rate
DRIVE.PORT 1.1	: dos.	Port 1.1...12.4	Function dos., fill, rinse, prep., drain	Function assignment of Dosino ports

Editing

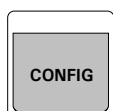
Key functions

 	Next / previous menu item Displays next or previous menu item.	 	First / last menu item Displays first or last menu item.
 	Cursor shift Shifts the cursor in between the parameters of a menu line.	 	Default value Deletes an entry and sets its default value.
	Data entry Accepts data entry; opens sub-menus. Data modifications will only be accepted when confirmed with <ENTER>.	 	Roll-up selector Displays each entry of a given list of data to select from. Roll-up selections are marked with a colon (:).
	Quit Quits data entry; branches dialog to a higher menu level or normal state resp.	 	Insert / delete command line Inserts an empty sequence command line (NOP) or deletes the current command line.
	Trace function Executes the actual sequence command line and displays next line.	 	Text edit mode Enters text edit mode. Places text cursor at start (<) or end (>) of the text string.
 	LEARN mode Starts or ends the interactive LEARN mode. It allows fine tuning of the parameters of most sample changer commands in operating sequences.	Adaptive sample changer commands: LIFT, PUMP, STIR, DOS, SCAN, WAIT	

LCD Display

Normal state	method name →	***** counter 1/12 PUMP-+++ STIR+--- ready	← sample changer status
		↑ stirrer status	
Series operating	sequence running →	***** counter 2/12 START 03 WAIT 11 s	← parameter
		↑ current command and sequence line	

Basic Configuration



General settings
Rack configuration
Dosing unit settings
RS232 interface settings

Configuration menu

Display	Default value	Entry range	Function
>auxiliaries			
dialog:	english	english, deutsch, français, español	Selection of dialog language
display contrast	3	0...7	Adjust display contrast
beeper:	ON	ON,OFF	Switch on/off acoustic warning signal
device label	*****	8 ASCII-chars	Entry of device label
program	730.0013	read only	Program version
max. lift way	235 mm	0...325 mm	Maximum lift way (lift 1 and 2). Defines lowest lift position possible. <CLEAR> enters actual lift position. RESET required.
pumps on tower 1	1	0, 1, 2	Number of pumps on tower 1. RESET required to effect.
pumps on tower 2	1	0, 1, 2	Number of pumps on tower 2. RESET required to effect.
swing head:	OFF	ON,OFF	Switch on/off swing head. RESET required to effect.
beaker sensor:	ON	ON,OFF	Switch on/off beaker sensor. RESET required to effect.
>rack definitions			
rack number	1	1...16	Number of rack
code	000001	000001...111111	Binary ID code for rack identification
type:	M12-0	M12-0 ...	Predefined rack type
work position	0 mm	0...325 mm	Working position for lift 1 and 2 . <CLEAR> enters actual position.
rinse position	0 mm	0...325 mm	Rinsing position for lift 1 and 2 . <CLEAR> enters actual position.
shift position	0 mm	0...325 mm	Shift position for lift 1 and 2. <CLEAR> enters actual position.
special position	0 mm	0...325 mm	Special position for lift 1 and 2 . <CLEAR> enters actual position.
>rack definitions 1			
>>special positions			
special beaker 1	0	0...max.pos.	Rack position of special beaker 1
... up to special beaker 8	
>dosing units			
dosing unit	1	1...12	Dosing unit number
max. rate 1	160 ml/min	0.01...160 ml/min	Maximum flow rate at Dosino port 1
tube length 1	1000 mm	0...30000 mm	Length of tube connected to Dosino port 1
tube diameter 1	2 mm	0.1...20 mm	Inner diameter of tube connected to Dosino port 1
max. rate 2	160 ml/min	0.01...160 ml/min	Maximum flow rate at Dosino port 2
tube length 2	250 mm	0...30000 mm	Length of tube connected to Dosino port 2
... up to port 4	
>RS232-settings			
baud rate:	9600	300,600,1200,2400,4800,9600	Data transmission rate
data bit:	8	7, 8	Data bits
stop bit:	1	1, 2	Stop bits
parity:	none	none, odd, even	Parity

Basic Configuration

Continued

handshake:	HWS	HWS, HWfull, SWchar, SWline, none	Handshake
character set:	IBM	IBM, Epson, Seiko,Citizen, HP	Character set for printer or PC
RS control:	ON	ON, OFF	Switch on/off data receiving via serial Interface (RS 232)

Operating Sequences and Method Parameters

PARAM		Number of samples Start sequence Sample sequence Final sequence	Sample changer settings Stirring rates Dosing unit definitions Manual stop options	Parameter menu Method
Display	Default value	Entry range	Function	
number of samples:	rack	rack, *, 1..999	Number of samples in a series	
>start sequence			Start sequence of a series	
>sample sequence			Sample sequence of a series	
>final sequence			Final sequence of a series	
>changer settings			Sample changer settings	
rack number	0	0..16	Number of rack for current method	
lift rate 1	25 mm/s	3..25 mm/s	Lift rate tower 1	
lift rate 2	25 mm/s	3..25 mm/s	Lift rate tower 2	
shift rate	20	3..20	Rack shift rate (in degree/sec)	
shift direction:	auto.	auto., +, -	Shift direction of the rack	
beaker test mode:	single	single, both	Beaker test on one single tower or on both towers	
on beaker error:	MOVE	MOVE, display	Sample changer reaction on missing beaker	
>stirring rates			Stirring rates	
stirrer 1	3	1..15	Stirring speed of stirrer 1	
stirrer 2	3	1..15	Stirring speed of stirrer 2	
stirrer 3	3	1..15	Stirring speed of stirrer 3	
stirrer 4	3	1..15	Stirring speed of stirrer 4	
>dosing unit def.			Dosing unit definitions	
dosing drive	1	1..12	Dosing drive address	
dos.rate:	max. ml/min	0.01..160 ml/min	Dosing rate	
fill.rate:	max. ml/min	0.01..160 ml/min	Filling rate	
dosing	port 1	1..4	Assignment of Dosino port to dosing outlet	
filling	port 2	1..4	Assignment of Dosino port to filling inlet	
rinsing	port 2	1..4	Assignment of Dosino port to rinsing inlet (on release option)	
preparation	port 1	1..4	Assignment of Dosino port to outlet for preparation cycle	
drain	port 4	1..4	Assignment of Dosino port to air inlet	
>>manual stop			Manual stop options	
CTL Rmt:	*****	STOP device1, STOP device2, STOP device*, 14 bit (1,0 or *)	Remote output signal on manual stop command	
CTL RS232:		&M;\$S,14 characters	Data output via serial interface (RS232) on manual stop command	

Method Memory



Recall a method
Store a method
Delete a method

User method menu

Display	Default value	Entry range	Function
>recall method			Recalling a method
method:	XXXXXXXX	8 ASCII-characters, *****	Selection of a method to recall (<SELECT> or enter text) ***** = blank method (<CLEAR>)
>store method			Storing a method
method:	XXXXXXXX	8 ASCII-characters	Name of a method to store (<SELECT> or enter text)
XXXXXXXX overwrite ?			Overwriting confirmation <ENTER>, cancel with <QUIT>
>delete method			Deleting a method
method:	XXXXXXXX	8 ASCII-characters	Selection of a method to delete (<SELECT> or enter text)
delete XXXXXXXX ?			Deletion confirmation <ENTER>, cancel with <QUIT>

Series Operating

Preparation

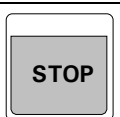
Key	Display	Entry range	Function
	SAMPLE: = XXX	1...999	Definition of the first sample beaker of a series. (optional, if undefined SAMPLE=1) Definitions in sequences are dominant e.g. : 01 SAMPLE = rack (optional; if undefined in sequence, manual setting is valid)
	>parameters number of samples : rack	rack, *, 1...999	Number of samples (will be saved with the method).

Series Operating / Key functions

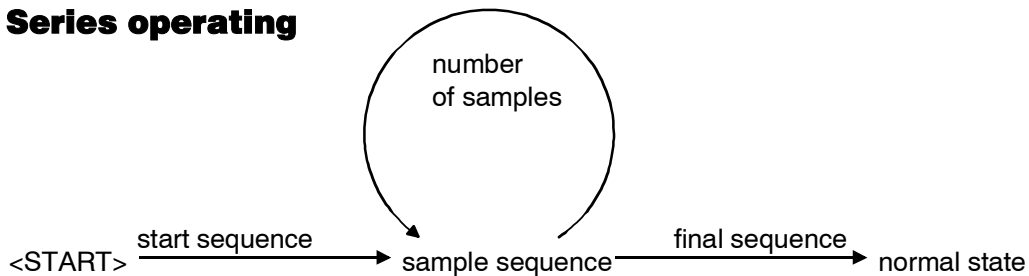


- starts a method
- restarts a method from 'hold' state

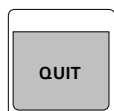
- stops a method
(final sequence will not be executed)



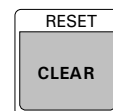
Series operating



- holds a running method
- may be continued with <START>



- quits a running command
- quits error messages



- stops a series after the current sequence
(final sequence will not be executed)

Sample Changer Commands

Command	Default value	1. Param.	2. Parameter	Function
SAMPLE: = 1		Function =, +, -	Value 1...999	Definition of the first sample beaker of a series
MOVE 1 : sample		Tower 1,2	Beaker sample, spec.1...8, 1...999	Shift the rack to place a beaker to the specified tower
LIFT: 1 : rest mm		Tower 1,2, *	Position work, rinse, shift, special, rest, 0...325 mm	Setting a lift position
PUMP 1.1 : 1 s		Pump 1.1...2.2, 1.*,2.*	Duration/status 1...999 s, ON,OFF	Pump control (1. param.: tower.pump)
STIR: 1 : 1 s		Stirrer 1...4,*	Duration/Status 1...9999 s, ON,OFF	Stirrer control
DOS: 1 : 1 ml		Address 1...12,*	Function/Volume fill, release, prepar., empty, ejct, adjust, level ±0.001...999.999 ml	Dosimat / Dosino control
SCN:Rm : ready1		Interface Rm, RS	Input signal/data ready1, ready2, ready*, end1, end2, endmeter, 8 bit (1,0 or *) 'clear' value: *R", 14 ASCII-chars (* = any character or string)	Interface scan Scans the 'remote' interface until the specified signal is received. Scans the serial interface (RS 232) until the specified data are received.
CTL:Rm: INIT		Interface Rm, RS	Output signal/data START device1, START device2, START device*, START dos1, START dos2, START dos*, METER mode pH, METER mode T, METER mode U, METER mode I, METER mode C, METER cal pH, METER cal C, METER enter, INIT, 14 x 1,0 or * clear value: &M;\$G 14 ASCII-chars	Interface control Sets the specified remote output signal. May be defined as binary pattern. Transmits the specified data via serial interface (RS232). Use text edit mode.
WAIT 1 s		Time 0...9999 s		Waiting time in series operation
ENDSEQ				End of a sequence
DEF-Commands				Definition of various settings
STIRRATE 1 3		Stirrer 1...4	Stirring rate 1...15	Stirring rate
DOSRATE 1 160		Address 1...12	Dosing rate 0.01...160 ml/min	Dosing rate
FILLRATE 1 160		Address 1...12	Filling rate 0.01...160 ml/min	Filling rate
LIFTRATE 1 25 mm/s		Tower 1,2	Lift rate 3...25 mm/s	Lift rate
SHIFTRATE: auto. 20		Direction auto.,+,-	Shift rate 3...20 w/s	Rack shift direction and shift rate
DRIVE.PORT 1.1: dos.		Port 1.1...12.4	Function dos., fill, rinse, prep., drain	Function assignment of Dosino ports