


















| Manual Operation | | Normal state |
|--|---|--|
|   <p>Lift position Raises or lowers the lift to rest position (HOME) or work position (END).</p> |   <p>Lift control Raises or lowers the lift.</p> | |
|    <p>Initialize sample changer Initializes sample changer (RESET) or resets sample changer to initial position (ENDSEQ).</p> |   <p>Shifting the rack Shifts the rack by one position to the left (anticlockwise) or to the right (clockwise).</p> | |
|  <p>Stop Stops all current changer functions.</p> | | |
| Key | Display | Function |
|  | LIFT: 1 : rest mm rest,work,rinse shift,special,0...125 mm | Lift control Raises or lowers the lift to the specified position. |
|  | MOVE 1 : sample sample,spec.1...8,1...999 | Moving a vessel Shifts the rack to place the specified vessel at the needle. |
|  | SAMPLE: = 1 1...999 | Definition of sample position Defines the rack position of the first sample vessel of a series. |
|  | PUMP+ PUMP- | Pump control Switches on/off the peristaltic pump at the tower. |
|  | Print: config config,param, usermeth,all | Print a report Prints out reports of the IC Sample Processor. |
|  | SCN:Rm : 00000000 Interface Signal/Data Rm 8 x 1,0 or * RS 14 ASCII characters | Interface scan Displays the state of the remote control lines (Input 0...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 (Output 0...13) in order to control (e.g. start) peripheral devices or transmits data via serial interface (RS232). <SELECT>-options see sample changer commands. |

| Display | |
|-------------------------|---|
| Normal state | <div style="text-align: center;">sample counter ↓</div> <div style="display: flex; justify-content: space-between;"> method name → <div style="border: 1px solid black; padding: 2px;"> ***** counter 1/127 </div> ← sample changer status </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> pump status → <div style="border: 1px solid black; padding: 2px;"> PUMP- ready </div> </div> |
| Series operating | <div style="display: flex; justify-content: space-between;"> sequence running → <div style="border: 1px solid black; padding: 2px;"> ***** counter 2/127 START 03 WAIT 11 s </div> ← parameter </div> <div style="text-align: center; margin-top: 5px;">↑ current command and sequence line</div> |

Basic Configuration



General settings
Rack configuration
RS232 interface settings

Configuration menu

| Display | Default value | Entry range | Function |
|----------------------------------|---------------|--------------------------------------|---|
| >auxiliaries | | | |
| dialog: | english | english,deutsch, français,español | General settings 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 char. | Entry of device label |
| program | 5.766.0010 | read only | Program version |
| max. lift way | 125 mm | 0..125 mm | Maximum lift way; defines lowest lift position possible. <CLEAR> enters actual lift position. RESET required to effect. |
| >rack definitions | | | |
| rack number | 2 | 1..16 | Number of rack |
| code | 010001 | 000001..111111 | Binary ID code for rack identification |
| type: | M-129-2 | M129-2,... | Predefined rack type |
| work position | 125 mm | 0..125 mm | Working position for needle. <CLEAR> enters actual position. |
| rinse position | 125 mm | 0..125 mm | Rinsing position for needle. <CLEAR> enters actual position. |
| shift position | 0 mm | 0 mm | Shift position for needle. |
| special position | 0 mm | 0..125 mm | Special position for needle. <CLEAR> enters actual position |
| >rack definitions 2 | | | |
| >>special positions | | | |
| special beaker 1 | 128 | 0..max.pos. | Rack position of special beaker 1 |
| special beaker 2 | 129 | 0..max.pos. | Rack position of special beaker 2 |
| ... up to special beaker 8 | | ... | ... |
| >RS232 settings | | | |
| baud rate: | 9600 | 300,600,1200,2400, 4800,9600 | RS232 interface settings Data transmission rate |
| data bit: | 8 | 7,8 | Data bits |
| stop bit: | 1 | 1,2 | Stop bits |
| parity: | none | none,odd,even | Parity |
| 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 (RS232) |

Operating Sequences and Method Parameters



Number of samples
Start sequence
Sample sequence

Final sequence
Sample changer settings
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 | | | |

Operating Sequences and Method Parameters

continued



| Display | Default value | Entry range | Function |
|-----------------------------|---------------|-----------------------|---|
| >changer settings | | | Sample changer settings |
| rack number | 0 | 0..16 | Number of rack for current method |
| lift rate 1 | 12 mm/s | 3..12 mm/s | Lift rate at tower |
| shift rate | 20 | 3..20 | Rack shift rate (in degree/sec) |
| >manual stop | | | Manual stop options |
| CTL Rmt: ***** | | 14 bit (1, 0 or *) | Remote output signal on manual stop command |
| CTL RS232: | | &PR;\$S,14 characters | Data output via serial interface (RS232) on manual stop command |

Method Memory



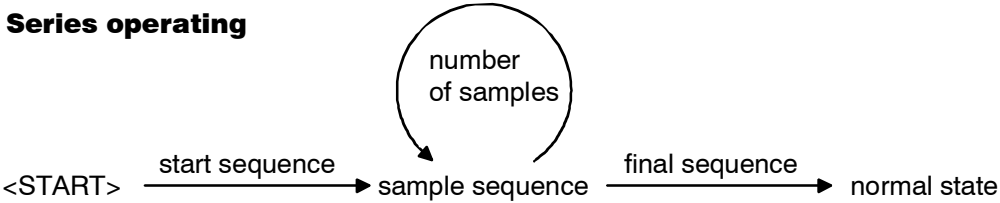



| Display | Default value | Entry range | Function |
|---|----------------------|---------------------------|---|
|  Recall a method Store a method Delete a method | | | User method menu |
| >recall method | | | Recalling a method |
| method: | XXXXXXXX | 8 ASCII characters, ***** | Selection of a method 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 ? | <ENTER>, <QUIT> | Overwriting confirmation with <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 ? | <ENTER>, <QUIT> | Deletion confirmation with <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.: 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




















| | |
|---|--|
|  <ul style="list-style-type: none"> starts a method restarts a method from 'hold' state |  <ul style="list-style-type: none"> stops a method (final sequence will not be executed) |
| <p>Series operating</p>  | |
|  <ul style="list-style-type: none"> holds a running method may be continued with <START> |  <ul style="list-style-type: none"> quits a running command quits error messages |
|  <ul style="list-style-type: none"> stops a series after the current sequence (final sequence will not be executed) | |

Sample Changer Commands

| Command | Default value | 1 st Param. | 2 nd Parameter | Function |
|-------------------|---------------|------------------------|---|---|
| SAMPLE: = 1 | | Function =,+,- | Value 1...999 | Definition of sample position |
| MOVE 1 : sample | | Tower 1 | Vessel sample,spec.1...8,1...999 | Shift rack to place the specified vessel at the needle |
| LIFT: 1 : rest mm | | Tower 1 | Position work,rinse,shift, special,rest,0...125 mm | Setting a lift position |
| PUMP 1.1 : 1 s | | Pump 1.1 | Duration/status 1...999 s,ON,OFF | Pump control (1 st param.: Tower.Pump) |
| SCN:Rm : Ready1 | | Interface Rm RS | Input signal/data Ready1,End1,End2,Wait1, Wait2,Wait*,Pump1 ?, Pump2 ?,Pump* ?, 8 bit (1,0 or *) 14 ASCII characters (* = any char. or string) | Interface scan Scans the remote interface until the specified signal is received. Scans the serial interface (RS232) until the specified data are received. |
| CTL:Rm: INIT | | Interface Rm RS | Output signal/data INIT,INIT 732,PROG R/S 1, PROG R/S 2,PUMP R/S 1, FILL A 1,INJECT A 1, FILL B/STEP 1,INJECT B 1, ZERO 1,PUMP 752 ON, PUMP 752 OFF,STEP MSM 753, 14 bit (1,0 or *) clear value: &D.S"9" 14 ASCII characters | 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 |

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, SCAN, WAIT | |