

|           |          |        |                   |                      |                             |                              |                            |
|-----------|----------|--------|-------------------|----------------------|-----------------------------|------------------------------|----------------------------|
| Main menu | Settings | Set up | Display           | Q(t) axis            | Linear or logarithmic       | OPE                          | CU                         |
|           |          |        |                   | Decades              | Decades                     | OPE                          | CU                         |
|           |          |        |                   | Auto scale           | Auto scale                  | OPE                          | CU                         |
|           |          |        |                   | Time axis            | Time axis scale             | OPE                          | CU                         |
|           |          |        |                   | Display limits       | Displ. upper limit exponent | OPE                          | CU                         |
|           |          |        |                   |                      | Displ. lower limit exponent | OPE                          | CU                         |
|           |          |        | Units (display)   | Leak rate unit VAC   | Leak rate unit VAC          | OPE                          | CU                         |
|           |          |        |                   | Leak rate unit SNIFF | Leak rate unit SNIFF        | OPE                          | CU                         |
|           |          |        |                   | Pressure unit        | Pressure unit               | OPE                          | CU                         |
|           |          |        |                   | Measurement display  | Measurement view mode       | OPE                          | CU                         |
|           |          |        |                   | Show value           | Show value                  | OPE                          | CU                         |
|           |          |        | Brightness        | Display brightness   | Display brightness          | OPE                          | CU                         |
|           |          |        | Trigger           | Trigger sel.         | Used trigger                | OPE                          | CU                         |
|           |          |        |                   | Trigger 1            | Trigger 1 level             | SUP                          | MSB                        |
|           |          |        |                   | Trigger 2            | Trigger 2 level             | SUP                          | MSB                        |
|           |          |        |                   | Trigger 3            | Trigger 3 level             | SUP                          | MSB                        |
|           |          |        |                   | Trigger 4            | Trigger 4 level             | SUP                          | MSB                        |
|           |          |        | Favorites         | Favorite 1           |                             | SUP                          | CU                         |
|           |          |        |                   | Favorite 2           |                             | SUP                          | CU                         |
|           |          |        |                   | Favorite 3           |                             | SUP                          | CU                         |
|           |          |        | Interfaces        | MS module            | TMP                         | Settings                     | Nominal state TMP          |
|           |          |        |                   |                      |                             |                              | TMP speed                  |
|           |          |        |                   |                      |                             |                              | Fan mode                   |
|           |          |        |                   | I/O module           | Ion source                  | Emission                     | Emission                   |
|           |          |        |                   |                      | Cathode                     | Cathode selection            | Cathode selection          |
|           |          |        |                   |                      | Device sel.                 | Module at I/O connector      | Module at I/O connector    |
|           |          |        |                   |                      | Analog outp.                | Config. Analog output 1      | INT                        |
|           |          |        |                   |                      |                             | Config. Analog output 2      | INT                        |
|           |          |        |                   |                      | PLC inputs                  | Configuration dig. Input     | INT                        |
|           |          |        |                   |                      |                             | INV                          | INT                        |
|           |          |        | Units (interface) | LR limits            |                             | Input number                 | VIE                        |
|           |          |        |                   |                      |                             | Configuration dig. Output    | INT                        |
|           |          |        |                   |                      |                             | INV                          | INT                        |
|           |          |        |                   |                      |                             | Output number                | VIE                        |
|           |          |        |                   |                      | Protocol                    | I/O module protocol          | INT                        |
|           |          |        | Bus module        | Units (interface)    | Analog scale                | Scale for leak rate          | INT                        |
|           |          |        |                   |                      |                             | Anal. outp. upper limit exp. | INT                        |
|           |          |        |                   |                      | Leak rate unit VAC          |                              | INT                        |
|           |          |        | Accessories       | Control unit         | Leak rate unit SNIFF        |                              | INT                        |
|           |          |        |                   |                      | Pressure unit               |                              | INT                        |
|           |          |        |                   |                      | Upper VAC                   | Leak rate upper limit VAC    | INT                        |
|           |          |        |                   |                      | Lower VAC                   | Leak rate lower limit VAC    | INT                        |
|           |          |        | Operation modes   | Vacuum               | Upper SNIF                  | Leak rate upper limit SNIF   | INT                        |
|           |          |        |                   |                      | Lower SNIF                  | Leak rate lower limit SNIF   | INT                        |
|           |          |        |                   |                      | Bus module                  | Address                      | Bus module address         |
|           |          |        |                   |                      | Device sel.                 | Module at I/O connector      | Module at I/O connector    |
|           |          |        |                   | Sniffer              | Language                    | Language                     | OPE                        |
|           |          |        |                   |                      | Messages                    | Show warnings                | OPE                        |
|           |          |        |                   |                      | Volume level                | Volume level                 | OPE                        |
|           |          |        |                   |                      | Audio                       | Audio alarm mode             | OPE                        |
|           |          |        |                   |                      | Energy                      | Display off after            | OPE                        |
|           |          |        | Mass              | Calibr. factor       | Calibr. factor              | Mass 2                       | Calibr. factor VAC M2      |
|           |          |        |                   |                      |                             | Mass 3                       | Calibr. factor VAC M3      |
|           |          |        |                   |                      |                             | Mass 4                       | Calibr. factor VAC M4      |
|           |          |        |                   | Machine factor       | Machine factor              | Mass 2                       | Machine factor M2          |
|           |          |        |                   |                      |                             | Mass 3                       | Machine factor M3          |
|           |          |        |                   |                      |                             | Mass 4                       | Machine factor M4          |
|           |          |        |                   | ext. test leak       | ext. test leak              | Test leak external VAC       |                            |
|           |          |        |                   |                      | int. test leak              | Test leak internal           |                            |
|           |          |        |                   | VAC/SNIFF            | Operation mode              | Mass 2                       | Calibr. factor SNIF M2     |
|           |          |        |                   |                      | Calibr. factor              | Mass 3                       | Calibr. factor SNIF M3     |
|           |          |        |                   |                      |                             | Mass 4                       | Calibr. factor SNIF M4     |
|           |          |        |                   |                      | Machine factor              | Mass 2                       | Sniff factor M2            |
|           |          |        |                   |                      |                             | Mass 3                       | Sniff factor M3            |
|           |          |        | Zero/Filter       | Sniffer key          |                             | Mass 4                       | Sniff factor M4            |
|           |          |        |                   | ext. test leak       | Zero key sniffer            |                              |                            |
|           |          |        |                   |                      | ext. test leak              | Test leak external SNIF      |                            |
|           |          |        |                   | Capillary            | Capillary                   | Blocked                      | Pressure capillary blocked |
|           |          |        |                   |                      |                             | Broken                       | Pressure capillary broken  |
|           |          |        | Compatibility     | LR correction        | Machine factor in standby   |                              |                            |
|           |          |        |                   | Compatibility        | Compatibility mode          |                              |                            |
|           |          |        | Mass              | Mass                 |                             |                              |                            |
|           |          |        | Zero/Filter       | Zero                 | Zero with Start             |                              |                            |
|           |          |        |                   |                      | Zero mode                   |                              |                            |
|           |          |        |                   | Filter               | Filter mode                 |                              |                            |
|           |          |        | Filter settings   | 2-zone               | Filter leak rate threshold  |                              |                            |
|           |          |        |                   | Zero time            | Filter zero time            |                              |                            |
|           |          |        | Date/time         | Time                 | Time                        |                              |                            |
|           |          |        |                   | Date                 | Date                        | SUP                          | MSB                        |
|           |          |        |                   |                      |                             | SUP                          | MSB                        |

|           |           |               |                               |                                  |                           |
|-----------|-----------|---------------|-------------------------------|----------------------------------|---------------------------|
| Main menu | Functions | Zero          | Zero                          | SUP, (OPE via Favorites key)     | ---                       |
|           |           | Start/Stop    | Start/Stop                    | SUP, (OPE via Favorites key)     | ---                       |
|           |           | VAC/SNIFF     | Operation mode                | INT                              | MSB                       |
|           |           | Parameter     | Load                          | Load parameter                   | CU, MSB                   |
|           |           |               | Save                          | Save parameter                   | CU, MSB                   |
|           |           |               | Error info                    | Error info Viewer                | CU                        |
|           |           |               |                               | Error info Operator              | CU                        |
|           |           |               |                               | Error info Supervisor            | CU                        |
|           |           |               | List                          | Parameter list                   | CU, MSB                   |
|           |           |               | Para. access                  | Param. Authorization             | CU                        |
|           |           | Data          |                               | Control unit settings            | ---                       |
|           |           |               | Reset                         | MSB settings                     | ---                       |
|           |           |               |                               | Param. Authorization             | ---                       |
|           |           |               | Update                        | Software update Control unit     | ---                       |
|           |           |               | MSB                           | Software update MSB              | ---                       |
|           |           |               | I/O module                    | Software update I/O module       | ---                       |
|           |           |               |                               | Data recording                   | ---                       |
|           |           |               | Recorder                      | Record interval                  | ---                       |
|           |           |               |                               | Storage location                 | ---                       |
|           |           |               | Copy                          | Copy files                       | ---                       |
|           |           |               | Delete                        | Delete files                     | ---                       |
|           |           | Valves        | Open test leak internal       | SUP                              | MSB                       |
|           |           |               | Gas ballast                   | SUP                              | MSB                       |
|           |           |               | internal                      | SUP, (OPE via Favorites key)     | ---                       |
|           |           |               | external                      | SUP, (OPE via Favorites key)     | ---                       |
|           |           |               | dynamic                       | SUP, (OPE via Favorites key)     | ---                       |
|           |           |               |                               | INT                              | MSB                       |
|           |           |               | int. test leak                | Test leak internal               | MSB                       |
|           |           |               | Calibr. factor                | Calibr. factor xxx Mx            | MSB                       |
|           |           |               | ext. test leak                | Test leak external xxx           | MSB                       |
|           |           |               | Machine factor / Sniff factor | Machine factor / Sniff factor Mx | MSB                       |
|           |           | CAL           | CAL request                   | Calibration request              | MSB                       |
|           |           |               | Machine / Sniffer             | SUP, (OPE via Favorites key)     | ---                       |
|           |           |               |                               | OPE                              | CU                        |
|           |           |               | Error info                    | OPE                              | CU                        |
|           |           |               | Error info Operator           | SUP                              | CU                        |
|           |           |               | Error info Supervisor         | Dependent on access level        | CU                        |
|           |           |               | Para. access                  | Param. Authorization             | ---                       |
|           |           |               | Integrator                    | Enter new Integrator PIN:        | CU                        |
|           |           |               | PIN assign                    | Enter new Supervisor PIN:        | CU                        |
|           |           |               | Supervisor                    | Enter new Operator PIN:          | CU                        |
|           |           | Authorization | Reset                         | INT                              | ---                       |
|           |           |               | Control unit settings         | INT                              | ---                       |
|           |           |               | MSB settings                  | INT                              | ---                       |
|           |           |               | Param. Authorization          | INT                              | ---                       |
|           |           |               | M                             | INT                              | MSB                       |
|           |           |               | M                             | INT                              | MSB                       |
|           |           |               | Maintenance work              | INT                              | MSB                       |
|           |           |               |                               | OPE                              | CU                        |
|           |           |               | Error info                    | OPE                              | CU                        |
|           |           |               | Error info Operator           | SUP                              | CU                        |
|           |           | Viewer        | Error info Supervisor         | Dependent on access level        | CU                        |
|           |           |               | Para. access                  | Param. Authorization             | ---                       |
|           |           |               | PIN assign                    | Supervisor                       | SUP                       |
|           |           |               |                               | Enter new Supervisor PIN:        | CU                        |
|           |           |               | Operator                      | Operator                         | CU                        |
|           |           |               |                               | Enter new Operator PIN:          | CU                        |
|           |           |               | Error info                    | OPE                              | CU                        |
|           |           |               | Error info Operator           | OPE                              | CU                        |
|           |           |               | Error info Supervisor         | SUP                              | CU                        |
|           |           |               | Para. access                  | Param. Authorization             | Dependent on access level |
|           |           | information   | PIN assign                    | Operator                         | OPE                       |
|           |           |               |                               | Enter new Operator PIN:          | CU                        |
|           |           |               | Measurement                   | VIE                              | ---                       |
|           |           |               | Environment                   |                                  | ---                       |
|           |           |               | TMP error                     |                                  | ---                       |
|           |           |               | Temperature                   | Preampifier                      | ---                       |
|           |           |               | Electronic                    | Environment                      | ---                       |
|           |           |               | TMP                           | TMP error                        | ---                       |
|           |           |               |                               | Energy values                    | ---                       |
|           |           |               | Energy                        | Operation hours                  | ---                       |
|           |           | History       |                               | Supply voltages                  | ---                       |
|           |           |               |                               | Power supply                     | ---                       |
|           |           |               | Error                         | Error/warning history            | ---                       |
|           |           |               | Calibration                   | Calibration history              | ---                       |
|           |           |               | TMP error                     | TMP history                      | ---                       |
|           |           |               | Warnings                      | Active warnings                  | ---                       |
|           |           |               | Maintenance                   | Maintenance history              | ---                       |
|           |           |               |                               |                                  | ---                       |
|           |           |               | Control unit                  | Version control unit             | ---                       |
|           |           |               |                               | Memory                           | ---                       |
|           |           | MS module     |                               | Settings                         | ---                       |
|           |           |               |                               | Serial port wired                | ---                       |
|           |           |               | MSB (1)                       | MSB (1)                          | ---                       |
|           |           |               | MSB (2)                       | MSB (2)                          | ---                       |
|           |           |               | TMP controller (1)            | TMP controller (1)               | ---                       |
|           |           |               | TMP controller (2)            | TMP controller (2)               | ---                       |
|           |           |               | Ion source                    | Ion source                       | ---                       |
|           |           |               | Preamplifier                  | Preamplifier                     | ---                       |
|           |           |               | Preamplifier test             | Preamplifier test                | ---                       |
|           |           |               | Interfaces                    | I/O module                       | ---                       |
|           |           |               |                               | Bus module                       | ---                       |
|           |           |               | List                          | Parameter list                   | Dependent on access level |
|           |           |               | Favorite 3                    | VIE                              | CU, MSB                   |

• To receive information on the parameter. Press the INFO key.

• To reach a higher level from one of the lower levels; Press the BACK key for two seconds.

• VIE, OPE, SUP and INT are authorizations (see Chapter "Access control" in control unit operating manual).

• MSB = The parameter is saved in the mass spectrometer module. CU = The parameter is saved in the control unit.

• The parameters are described in the control unit operating manual.