OPERATING - MANUAL

LIBRATRONIC L20
A – 91136GB
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1. **Switch on power**
   - display shows the following picture:

   ![Display Picture](image)

   - if not, press F1
   - this is our basis picture now

2. **The programme is menu-controlled.**
   For operation we first make us familiar with the function of the different keys. Most of them are known from computer technology and also have the same function, as

   **ESC**  i.e. go back to previous step

   **↓**  enter, carry out, confirm

   **single arrow, move one step forwards or backwards**

   **double arrow, bigger step forwards or backwards, also some special functions as “weighing program”, “input- and output parameters” back –or forwards.**

   **F1...F6**  function keys, explanation at the end of any menu

   **?**  Question for help, anytime on call

   **M**  main menu

   **a/n**  shift key, to switch alpha-numerical key panel over to numbers or from small to capital letters. In the lower right picture corner the actual state is indicated after it is used.
3. selection of language

- press „M“

- display shows

<table>
<thead>
<tr>
<th>Menu Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 close menu</td>
</tr>
<tr>
<td>1 select language</td>
</tr>
<tr>
<td>2 weighing parameters</td>
</tr>
<tr>
<td>3 abort weighing</td>
</tr>
<tr>
<td>4 display actual weighing results</td>
</tr>
<tr>
<td>5 device statistics</td>
</tr>
<tr>
<td>6 reset day’s total</td>
</tr>
<tr>
<td>7 reset total weights</td>
</tr>
<tr>
<td>8 device select</td>
</tr>
<tr>
<td>9 service programme</td>
</tr>
</tbody>
</table>

- the cursor shows 0,
- press 1 or trace the cursor by using single arrow ▼ to position 1 (don’t use double arrow ▼)
- press ▼

- display

<table>
<thead>
<tr>
<th>Menu Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 back to previous menu</td>
</tr>
<tr>
<td>1 deutsch</td>
</tr>
<tr>
<td>2 English</td>
</tr>
<tr>
<td>3 Français</td>
</tr>
</tbody>
</table>

- press 2 or trace the cursor by using ▼ to position 2 (don’t use double arrow ▼)

- press ▼

- display jumps back to basis picture (pt. 1)
- power “off“
- power “on“

- all parameters are now in English.
4. Configuration

One display and operating unit can maximally serve four weighers. Therefore, the system has to know how much weighers are connected and to which one it momentarily communicates. Each controller (weigher) has its own address which is set through a “rotary-DIP-switch”. The first controller has the address 129, the second 130 etc.

- press „M“

- display \textbf{main menu}
  \textbf{9 service programmes}
  all settings are carried out under No. 9 service programmes
- press 9 or trace the cursor by using \textbf{\textdagger} to position 9
- press \textbf{\textdagger}

- display password for accessing service programmes

\[
\begin{array}{|c|}
\hline
\text{9} \\
\hline
\end{array}
\]

The factory setting for all passwords are 5 tines 9.
We use these passwords until you set up your own ones.

- press the 9 five times

\[
\begin{array}{|c|c|c|c|c|}
\hline
\text{#} & \text{#} & \text{#} & \text{#} \\
\hline
\end{array}
\]

- press \textbf{\textdagger}

- display service programmes
  0 close Menu
  1 Weighing parameters
  2 Device parameters
  3 Calibration parameters
  4 Diagnosis programme
  5 Maintenance programme
  6 Message management
  7 Default configuration
  8 Forms management
  9 Storage management
  10 Tine, Date
  11 Access code modification
  12 Cancel actual access code
In order to get the scale running we need the first three points. Configuration and all parameters related to the weigher are to be found under „Device parameters“.

- press 2 or trace the cursor by using ▼ to position 2
- press

- display password for installation functions

- enter the password as described under point 4 (five tines 9)

- press

- display system parameter management
  0 back to previous Menu
  1 system data
  2 digital output configuration
  3 digital input configuration
  4 analogue output configuration
  5 set point configuration
  6 network configuration
  7 remote access configuration
  8 profibus configuration
  9 printer configuration
  10 printing test
  11 page eject

We are interested in No. 1, 2, 3 and 6. First we want to look to No. 6

- press 6 or trace the cursor by using ▼ to position 6
- press
network configuration

physical address devices  I 1

address of the connected control device  129

device numbers of the connected controllers

<table>
<thead>
<tr>
<th>(1.)</th>
<th>(2.)</th>
<th>(3.)</th>
<th>(4.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>129</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

meaning:

- One controller (weigher) is connected to the display and operating unit with the first address 129. The cursor is in field „physical device address”. Is a 2\textsuperscript{nd} controller connected, the 2\textsuperscript{nd} position shows the 2\textsuperscript{nd} address 130.

For changing use ‹↓› or ‹↑›. A change is finished by using F3 to save. This applies for any saving, also in other menu points.

When change is finished

- press ESC

- display is back in

system parameter management

0
1
.
.
.
11

- cursor remains on last used position
5. programming the outputs

We are in the menu „system parameter management“ of “service programmes”.

- press 2 or trace the cursor by using ▼ to position 2.
- press ↓

- display output parameters

record number 1 of 18

meaning: We are in output 1 of 18 standard outputs, all parameter below are related to this output 1.

<table>
<thead>
<tr>
<th>signature</th>
<th>Grobstrom</th>
</tr>
</thead>
<tbody>
<tr>
<td>corresponding output pin</td>
<td>1</td>
</tr>
<tr>
<td>output function activated</td>
<td>yes</td>
</tr>
<tr>
<td>output on</td>
<td>no</td>
</tr>
<tr>
<td>switch on in safe state</td>
<td>no</td>
</tr>
<tr>
<td>Positive Polarity</td>
<td>yes</td>
</tr>
<tr>
<td>number of output pins</td>
<td>1</td>
</tr>
</tbody>
</table>

All needed outputs (see drawing) should be programmed as above all others should have a “no” in parameter “Output function activated”.
The cursor is in field „signature“. To change parameters use ▼ or ↓, never ▲!

In order to change yes and no, use 1 and 0.

1 = yes
0 = no

After a change use F3 again to save settings.

To change to the next output press ▼!
- display record number 2 of 18

meaning: We are in output 2 of 18 standard-outputs, all parameters below are related to this output 2.

Note: to change the outputs use ▼!

to change parameters use ▼.

When all needed outputs are programmed, go back to basis picture (use ESC), switch the supply voltage off and on again; the complete output configuration will be saved in the programme.

- press ESC

- display „system parameter management“
6. programming the inputs

We are in menu „system parameter management“ of the service programmes.

- press 3 or trace the cursor by using ▼ to position 3.
- press ↓

<table>
<thead>
<tr>
<th>Input parameter</th>
<th>record number 1 of 17</th>
</tr>
</thead>
</table>

meaning: We are in input 1 of 17 standard-outputs, all parameter below are related to this output 1.

<table>
<thead>
<tr>
<th>signature</th>
<th>Bodenklappe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Related Input contact</td>
<td>1</td>
</tr>
<tr>
<td>Input function activated</td>
<td>yes</td>
</tr>
<tr>
<td>Positive polarity</td>
<td>yes</td>
</tr>
<tr>
<td>Default value of input port</td>
<td>no</td>
</tr>
<tr>
<td>number of input ports</td>
<td>1</td>
</tr>
</tbody>
</table>

All needed outputs (see drawing) should be programmed as above, all others should have a “no” in parameter “Input function activated”.

The cursor is in field „assignment“. Move the cursor to the parameter to be changed by using ▼ or ↓, never ▼ !

to change of yes and no, use 1 and 0.

1 = yes
0 = no

After changing press F3 to save again. To change the inputs use the double arrow ▼
meaning: We are in input 2 of 17 standard inputs, all parameter below are related to this input 2.

Note: to change the inputs use ▼!

to change the parameter of an input use ▼!

Finally, when all needed inputs are programmed, go back to basis picture (use ESC), switch the supply voltage off and on again. The complete input configuration is now saved by the programme.

- press ESC

- display „system parameter management“
7. **programming the „system data“**

We are in menu „system parameter management“ of the service programmes.

- press 1 or trace the cursor by using ▼ to position 1

- press ↵

- display system data

For cursor function both arrows can be used, ▼ and ▲. System data are divided into 5 different sections.

1. **weighing parameters**
2. **serial interfaces**
3. **language parameter**
4. **step motor control**
5. **total display/ weight pulse**

1. For a normal weigher the standard values should be used.

2. If no printer or PC is installed, standard values should be used.

3. Three languages are choosable, German, French and English.

4. the first parameter is „use step motor?“. When input flap is motor controlled type „yes“; when input flap is pneumatically or otherwise controlled, type “no”.

   1 = yes  0 = no

5. for special use only

After changing press F3 to save again.

- press ESC

- display „system parameter management“
Concerning the device (weigher) the programming is now finished.

- press ESC

  display „service programmes“

- the cursor is at „Device parameters“
8. **programming of „Fine feed controller“**

We are in menu „service programmes“ of the main menu.

- press 1 or trace the cursor by using ▼ to position 1
- press ▼
  - display password for installation functions
  
  [Ⅰ]

- enter password, as described under No. 4 (five times 9)
- press ▼
   - display weighing parameter management
     0 back to previous menu
     1 weighing parameters
     2 use actual set points
     3 Fine feed controller
     4 Coarse feed controller
     5 statistics parameter
     6 Lot recording parameters
     7 lot recording results
     8 Customer data
     9 product data

For normal weighing we are interested in No. 1, 3 and 4 all others are for special use

- press 3 or trace the cursor by using ▼ to position 3
- press ▼
  - display fine feed controller

Some parameter fields are weakly surrounded, others stronger. The weak parameter fields are only indicators, displaying actual values or conditions which are programmed under other menu points.
9. **programming of „coarse feed controller“**

We are in menu „weighing parameter management“ in „service programmes“

- press 4 or trace the cursor by using ▼ to position 4

- press ↓

- display coarse feed controller

Again, some parameter fields are weakly surrounded, others stronger. The weak parameter fields are only indicators, displaying actual values or conditions which are programmed under other menu points. Contrary to the fine feed controller the limits should be used, for normal products the standard values are sufficient. Controller gain should be less than 1, depending on the product. All other parameters should be standard values for normal weighing function.

- After changing press F3 to save again

- press ESC

- display „weighing parameter management“
10. programming of weighing programmes

- The parameter of the weighing programme are related to the product. They can only be programmed with the customer’s product. All others are programmed before delivery.

- We are in menu „weighing parameter management“ of „service programmes“

- press 1 or trace the cursor by using ▼ to position 1

- press ↓

- display

<table>
<thead>
<tr>
<th>weighing parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>record number 1 of 3</td>
</tr>
</tbody>
</table>

meaning: We are in weighing programme No. 1 of 3 programmed.

128 different data records (different products, different weights) can be created. With F1 an actual weighing programme can be copied and changed to an other product or weight. At the end of each programme the function keys (F1 ... F6) are explained.

The cursor function is again separated, ▼ switches from one weighing programme to another, ▼ or ↓ switches from parameter to parameter of a weighing programme.

Again, we divide into ten different sections.
From programme version 280 we differ between three dynamic weighing programmes:

1. double feed mode
2. only dynamic operation
3. Dynamic operation with fine feed

The programme 1. can be chosen, when the input flap is step motor controlled; it has to be chosen when the input flap is controlled pneumatically or otherwise.
Programme 2. and 3. can only be run in step motor operation. Choose the programme which is supposed to run under the last parameter of the section “other modes”. The parameter is called “step motor mode”. The above sections are related to mode 1.
In mode 2, the section „methods of weighing“ and „step motor in double feed mode“ are replaced by a new section „step motor curve mode“.

In mode 3, „step motor in double feed mode“, is are replaced by a new section „step motor curve mode“.

There is not much to say about “Nominal values” and “tolerances”, just programme the values, in “set point presets” the optimum value for coarse and fine. „Maximal times“ can be a standard value with most of the products. “Minimum times” are related to the product in coarse and fine. Please also note that the “Minimum time” is the “log out time”, too.

“Zero setting” and “Methods of weighing” affects the capacity, meaning that the smaller the value the smaller is the capacity.

In “other mode” the standard value can be adopted up to the last parameter “step motor mode“. Here, the programme must be informed which mode was chosen. Is the input flap pneumatically controlled, choose mode 1. Is the input flap motor controlled for very fast and accurate operation, choose mode 3.

In section „step motor in double feed mode“ the opening of the input flap is programmed in coarse and fine steps. In “control data” the controllers are activated and the nominal value for fine is programmed.

In the dynamic programmes 2 and 3 the new section “Step motor curve mode” is realized. The opening of the input flap is programmed here. The parameters are related to how big the input flap is opened, how long it is opened, how slow the flap closes and the remaining time before the weight is reached.

- After changing the parameters press F3 to save again
- press ESC
  - display „weighing parameter management“
- press ESC
  - display „service programmes“
11. Calibration of the weigher

- We are in menu „service programmes“ of the main menu

- press 3 or trace the cursor by using ▼ to position 3

- press 

  - display password installation functions


- enter password as described under No. 4 (five times 9)

- press 

- display „Calibration parameters management“

  0 back to previous menu

  1 Calibration

  2 Motion detector parameters

- press 2 or trace the cursor by using ▼ to position 2

- press 

- display „motion detection/ zero setting“

  - stabilization time and range have to be set referring to vibrations, stabilization range should not be less than 4.0

  - After changing press F3 to save again.

- press ESC

- display „Calibration parameter management“

- press 1 or trace the cursor by using ▼ to position 1

- press 

- display Calibration parameters

  for cursor function use ▼, ▼ or 

- press ESC
The calibration programme consists of 6 different sections, most of them are programmed in the factory for new weighers before delivery. The weakly surrounded fields are only indicators showing actual values, the cannot be overwritten.

The first parameter „Verified operation mode“ is to be programmed with „yes“ when operated in verified dealings (1 = yes, 0 = no).

During calibration the DIP-switch located on the analogue portion of the controller must be in off-position.

1. weight cell data
2. controller data
3. weigher data
4. set-up measurement system
5. calibration procedure
6. actual calibration

1. The weight cell data you find in the data sheet of the load cell, the number of how much load cells (2 or 3) you can see at the weigher.

2. Weight unit is kg, approved calibration interval is 6000

3. Bagging scales are always type 1. maximum and minimum capacity you find at the fabrication label at the weigher. Estimated dead load for BEC 60 is 40,0 kg, for dynamic weighers 35,0 kg. From “possible calibration interval” and „calibration interval selection“ results the „resulting calibration interval“ in kg.
4. The parameters „Filter min index“, „min stable time“ and „max stable range“ should be programmed up to the local situation /vibration?). All other parameters should be standard values.

5. In the field “converter units” the direct connection to the load cell is obtained in units (no dimension). You find the explanation how to calibrate.

   (F1 = zero point) (F2 = calibration load)

6. In these fields the calibration values are stored.

   - For saving use F3 without security and F6 with security (in verified dealings the DIP-switch on the analogue portion of the controller has to be switched in on-position now).

   - press ESC
     - display „Calibration parameters management“

   - press ESC
     - display „service programmes“

   - press ESC
     - display „main menu“

   - press ESC
     - display basis picture
12.

Password query:

Some menu entries are only activating bar after a password has been entered. There are currently altogether four hierarchically graded levels of the admission safeguarding which all of them dispose about an individual password. These are the levels "access utilities", "master functions", "one judge functions" it and "lofts format". The passwords are equipped with ascending entitlement according to the above enumeration. This means, that e.g. "lofts format" also to the access to all other levels the password of the level entitles. The following illustration shows the password query of the level "utility". The entered password isn't shown readably. The number of entered jobs merely is recognizable.

Password, amendment / hierarchy

It is possible to change the passwords permanently. Is accessible in the menu of the utilities "change password" the function. One has e.g. "lofts format" himself with the password of the level, for therefore the password registered with the highest entitlement the following menu seems so:

All knowing word planes are accessible to the alteration here. " one has himself for utility against this only with the password of the level -- " for access the following menu seems, registered:

Only the password of the own, undermost authority level can be changed here. When dialing the menu item the following "changes" password for advertisement to the orientation been carried out:

This report shows the used password has laws up to which admission level. She remains visible for approx. 5 seconds. She can the one climb button close by pressing before. After choice one of the shown knowing word planes to the amendment the following window is opened: After petition of the new password this is shown as follows to control for approx. 5 second:
Change of access codes (password)

1. Definition

1 Level 09 Storage formatting
2 Level 07 Installation functions
3 Level 05 Master functions
4 Level 02 Access to service programs

You can work with a password of a higher level in all lower levels. So the level 09 password has the highest priority, with this password you are coming in any level. You are reaching with the password of level 05 all menu points of level 05 and 02, but not in level 07. You are reaching with the password of level 07 all menu points of level 07, 05 and 02, but not 09. The password of level 02 only authorized to access to the service programs, but not in level 05, 07 and 09.

2. Level 02

6 Reset total of day
9 Service programs

3. Level 05

4 Diagnosis program
10 Time and date
7 Reset total weights
5 Maintenance programs
6 Message management
8 Forms management
9 Storage management

4. Level 07

1 Weighing parameters
2 Device parameters
3 Calibration parameters
5. Level 09

all

6. Change of the password

- go via main menu into “service programs”
- trace the cursor to menu point 11 “Access code modification
- press ↩
- display

```
Please enter access code
[I
(level 09)
```

- five times the nine (company setting)
```
# # # # #
```

- press ↩
- display

Edit access codes
0 Closemenu
1 Level 09 Storage formatting
2 Level 07 Installation functions
3 Level 05 Master functions
4 Level 02 Access to service programs

- trace the cursor to the code which you want to change
- press ↩
- display

```
Please enter new password
[I
```

- (for instant: 22222)
pres five times the two
- display
```
22222
```

- press ↩
- display
  Information
  Security system message
  The new password is 22222

- go via ESC back to the basic picture