

# Service manual

## Touch screen - Industrial balance

### KERN FKT / IKT

Version 2.0  
4/2011  
GB





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# 1 Basic Information

## Grundlegende Hinweise

**The device must be repaired only by trained specialist staff or personnel with professional formation (such as a repair-specialist accredited by law concerning verification).**

**The service manual is obligatory for repair work.**

**After repair, original conditions of the device have to be restored.**

**Only original spare parts should be used.**

Das Gerät darf nur von geschultem oder beruflich ausgebildetem Fachpersonal (z. B. eichrechtlich anerkannter Instandsetzer) repariert werden.

Die Serviceanleitung ist bindend für Reparaturen.

Das Gerät muss nach erfolgter Reparatur wieder in den Originalzustand zurückversetzt werden.

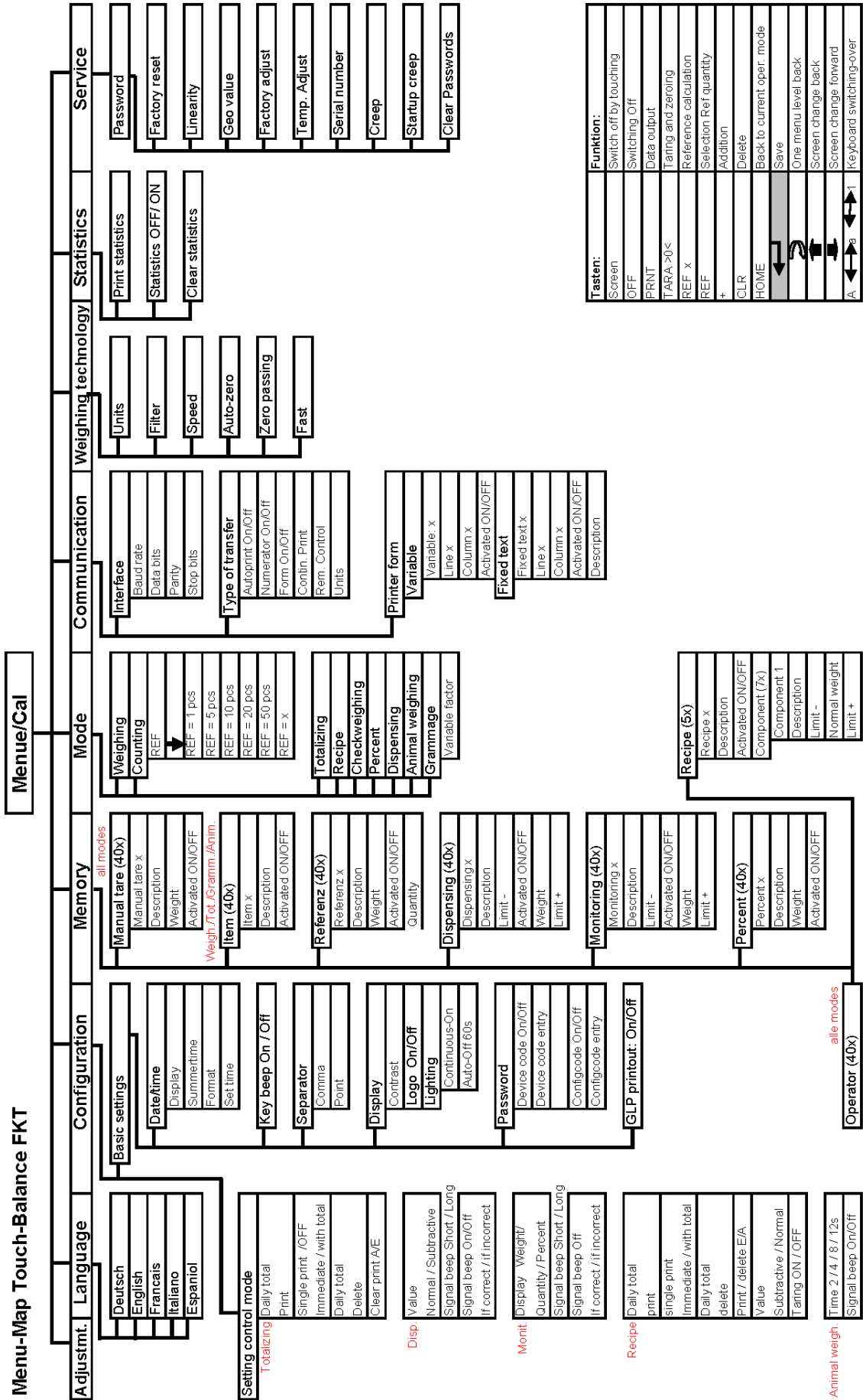
Es dürfen nur Originalersatzteile verwendet werden.

## 2 Introduction

This service manual covers the FKT and IKT series and is edited for the authorized servicing personnel.

Note all rights are reserved. Copying any part of this manual is prohibited without our permission.

# 3 Menu-Map



Tasten:	Funktion:
Screen	Switch off by touching
OFF	Switching Off
PRNT	Data output
TARA >0<	Taring and zeroing
REF x	Reference calculation
REF	Selection Ref quantity
+	Addition
CLR	Delete
HOME	Back to current oper. mode
↩	Save
↩	One menu level back
↩	Screen change back
↩	Screen change forward
A	Keyboard switching-over

## 4 Troubleshooting

Interruption	Possible cause
<p style="text-align: center;">- - - - -</p>	<ul style="list-style-type: none"> <li>• Overload: The scale is overloaded</li> <li>• Underload: Weighing range has been fallen short of</li> <li>• Mechanical defect</li> </ul>
<p style="text-align: center;">- - - - -</p> <p style="text-align: center;">or</p> <p style="text-align: center;">- - - <b>92,6 g</b></p> <p style="text-align: center;">(unstable negative value)</p>	<ul style="list-style-type: none"> <li>• Low voltage: Check power supply</li> <li>• The batteries are empty and should be replaced</li> </ul>
Weight display is not illuminated	<ul style="list-style-type: none"> <li>• The balance is not switched on.</li> <li>• The mains supply connection has been interrupted (mains cable not plugged in/faulty).</li> <li>• Power supply interrupted.</li> </ul>
The weight display changes continually	<ul style="list-style-type: none"> <li>• Draught/air movement</li> <li>• Table/floor vibrations</li> <li>• The weighing plate is in contact with foreign matter.</li> <li>• Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)</li> </ul>
The weighing result is obviously incorrect	<ul style="list-style-type: none"> <li>• The balance display is not set to zero</li> <li>• Adjustment is no longer correct.</li> <li>• Great fluctuations in temperature.</li> <li>• Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)</li> </ul>

Switch the balance off if other error messages should appear and then switch on again. Contact the manufacturer if the error message does not disappear.

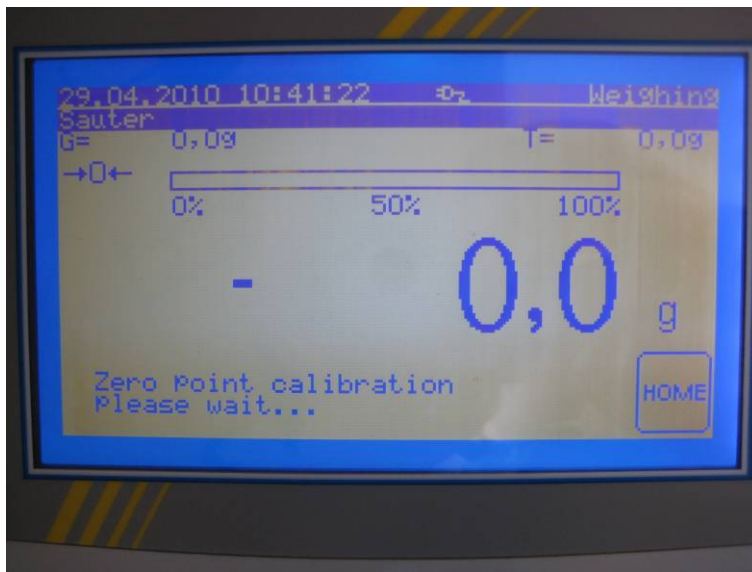
## 5 Adjustment

The balance must be adjusted at its place of installation before initial use and at regular intervals.

A warm-up time of about 2 hours is recommended for stabilisation.

Please use the recommended adjusting weight according to the technical data in the operating instruction.

1. Turn ON the balance.
2. Press the **[MENU/CAL]** key. Then press the **[Adjustment]** key to start the adjustment procedure.
3. The display appears:



4. After a short time the display appears:



5. Now set the required adjusting weight in the centre of the weighing plate.
6. After a short time balance will return into weighing mode automatically.
7. Remove adjusting weight.

## 6 Service Menu

### 6.1 How to Enter the Service Menu

1. Turn ON the balance.
2. Press the [MENU/CAL] key.
3. Press the [ ▼ ] key, then press the [Service] key.
4. The display appears:

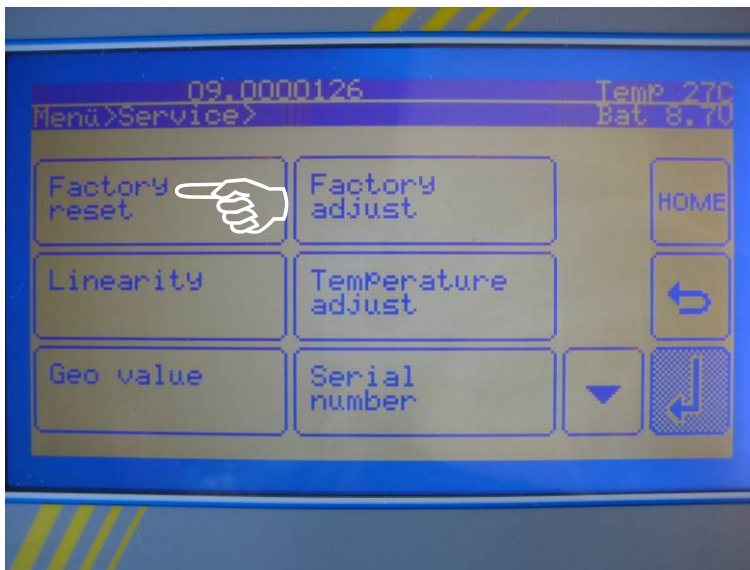


5. Enter the password [ 1 0 1 ] and confirm with [ENTER] key.



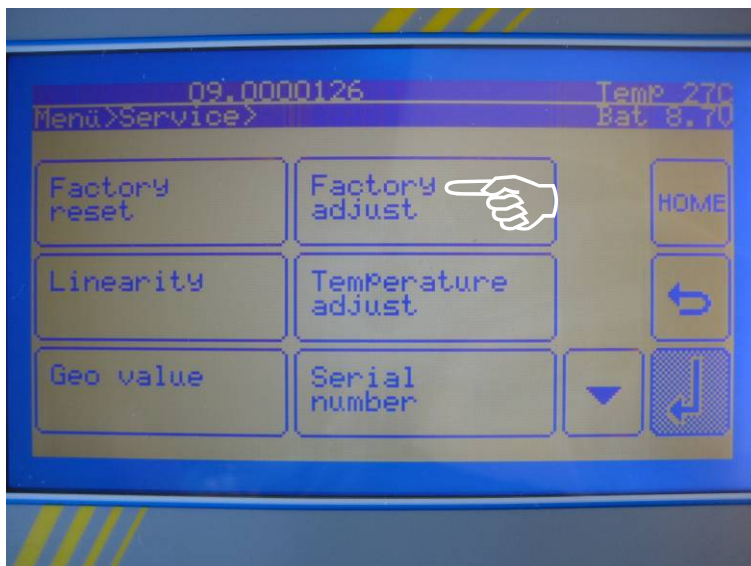
## 6.2 Factory Reset

Reset the application settings to factory settings, e.g. language, basic settings, weighing technology settings etc., with **[Factory reset]** key and confirm with **[ENTER]** key.



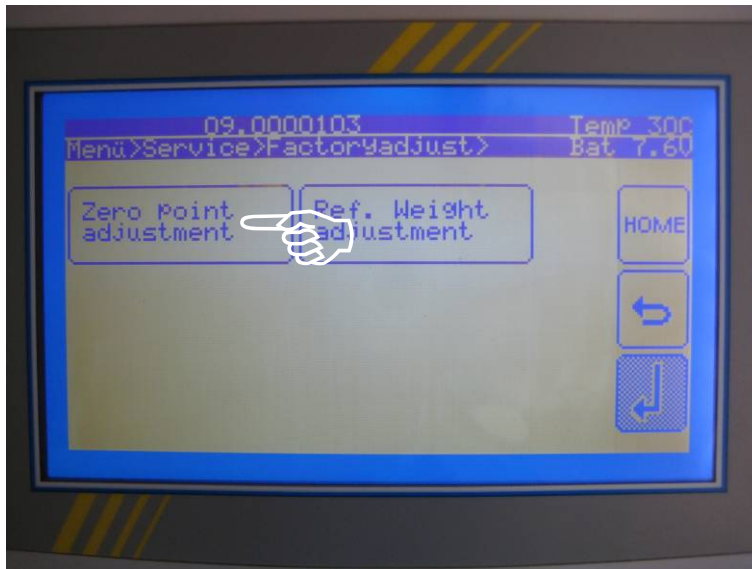
## 6.3 Factory Adjustment

1. Press the **[Factory adjust]** key.

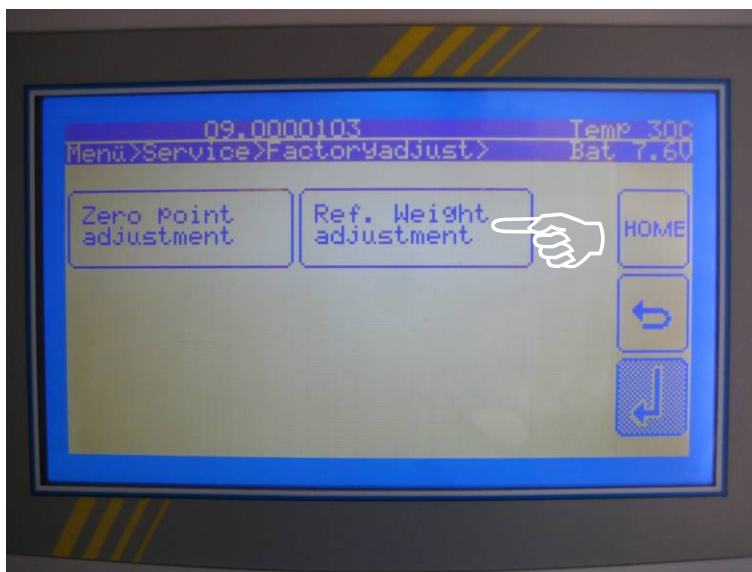





2. With empty weighing pan press the [**Zero point adjustment**] key and wait until the display appears the stability mark .



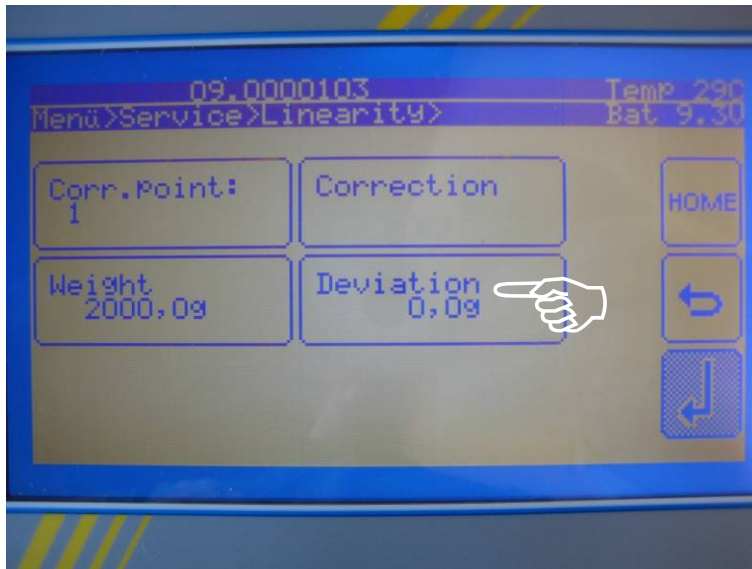
3. Now select [**Factory adjust**] again, place the **maximum weight** on the weighing pan and after that press the [**Ref. Weight adjustment**] key.



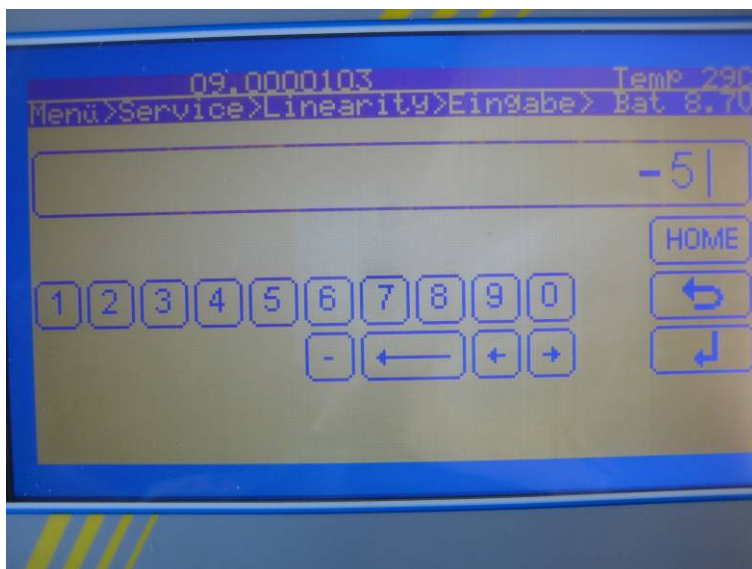
4. Balance measuring for approx. 1-2 minutes.
5. After that the display appears the stability mark .
6. Remove the weight.

## 6.4 Linearity Adjustment

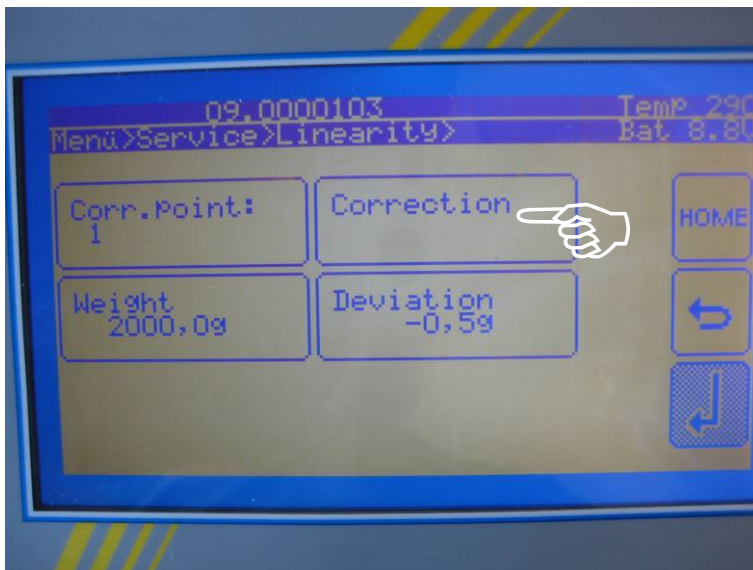
1. Turn ON the balance. After warming-up time and adjustment, check balance readings in all measuring points. In case of differences make a note.
2. Enter the Service Menu and select **[Linearity]**.
3. The display appears the first linearity point, e.g.



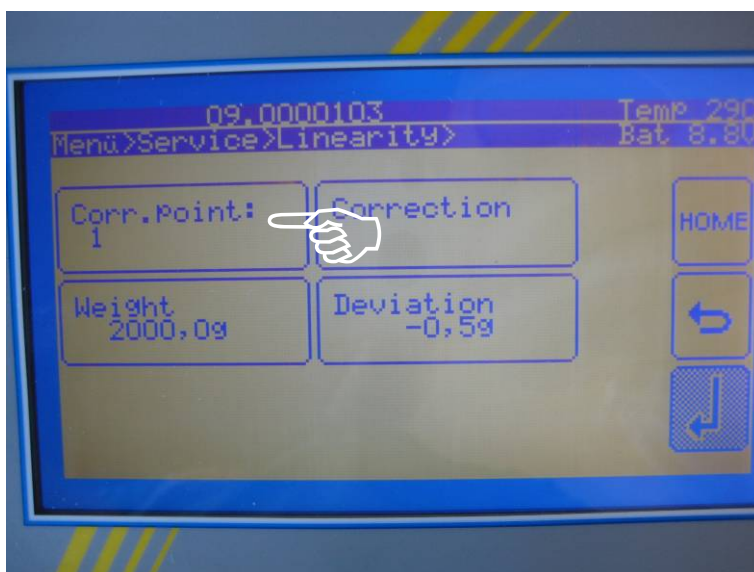
4. Press the **[Deviation]** key to enter the difference in digit, e.g. minus 5 digit and confirm with **[ENTER]** key.



5. The display appears



6. Press the [**Correction**] key to store the new deviation of this correction point.
7. To select another linearity point, which is outside the permissible tolerances, press the [**Corr.point:**] key and inscribe the deviation like described above.



8. To return to normal weighing mode press the [**ENTER**] key.

**Information:**

If there is a positive difference (e.g. 2000.6g = + 6 digit) you should subtract this difference to the stored value (e.g. [2000.0g -6d]).

If there is a negative difference (e.g. 1999.4g = - 6 digit) you should add this difference to the stored value (e.g. [2000.0g +6d]).

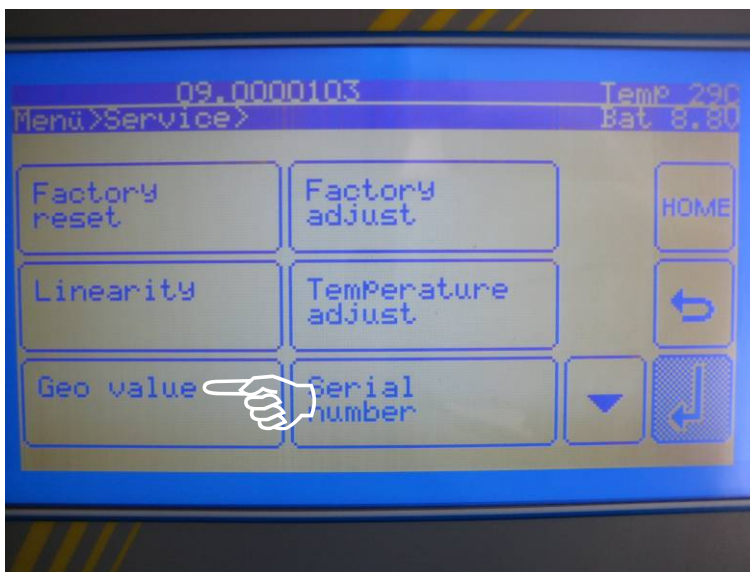
## 6.5 Geo Value

As the acceleration value due to gravity is not the same at every location on earth, each balance must be coordinated - in compliance with the underlying physical weighing principle - to the existing acceleration due to gravity at its place of location (only if the balance has not already been adjusted to the location in the factory).

To receive accurate measuring values it is recommended to adjust the balance with external weights according to chapter 5 "Adjustment".

In this category you can set the value of gravitational acceleration without external weights and thus adapt the scale to local gravitational conditions.

Please only change this setting if you are certain of the correct gravitational acceleration!

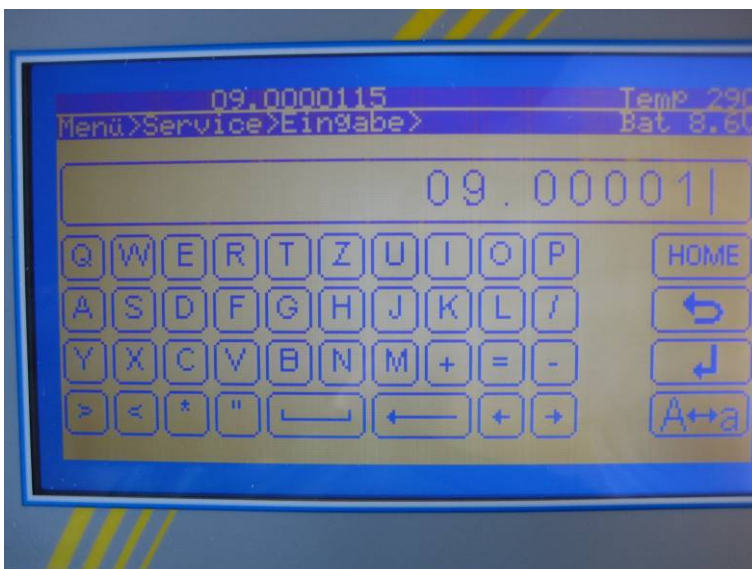
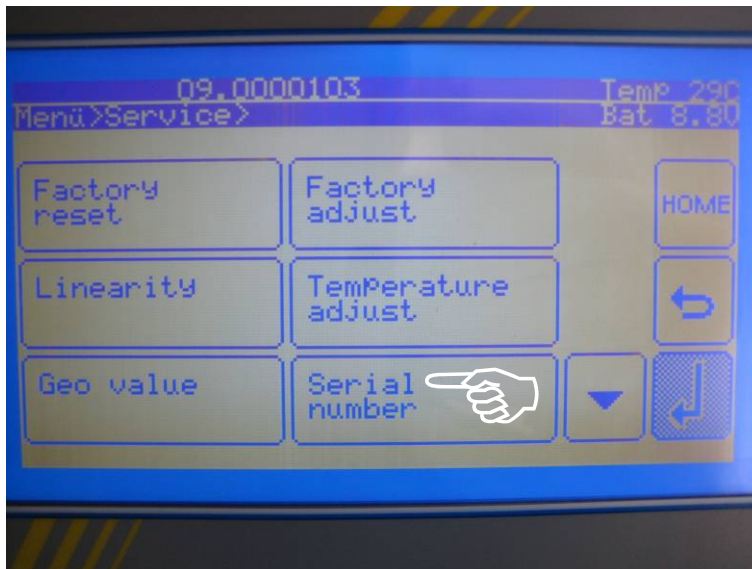


## 6.6 Serial Number

In this category you can view or change the balance serial number.

The number was assigned to it in the factory and should never be altered.

It is only necessary to change this number after replacing the main board.  
The serial number is given on the balance model label.



## 6.7 Clear Passwords

In this category you can clear all passwords (device code and configuration code).

Select [**Clear Passwords**] and confirm with [**ENTER**].

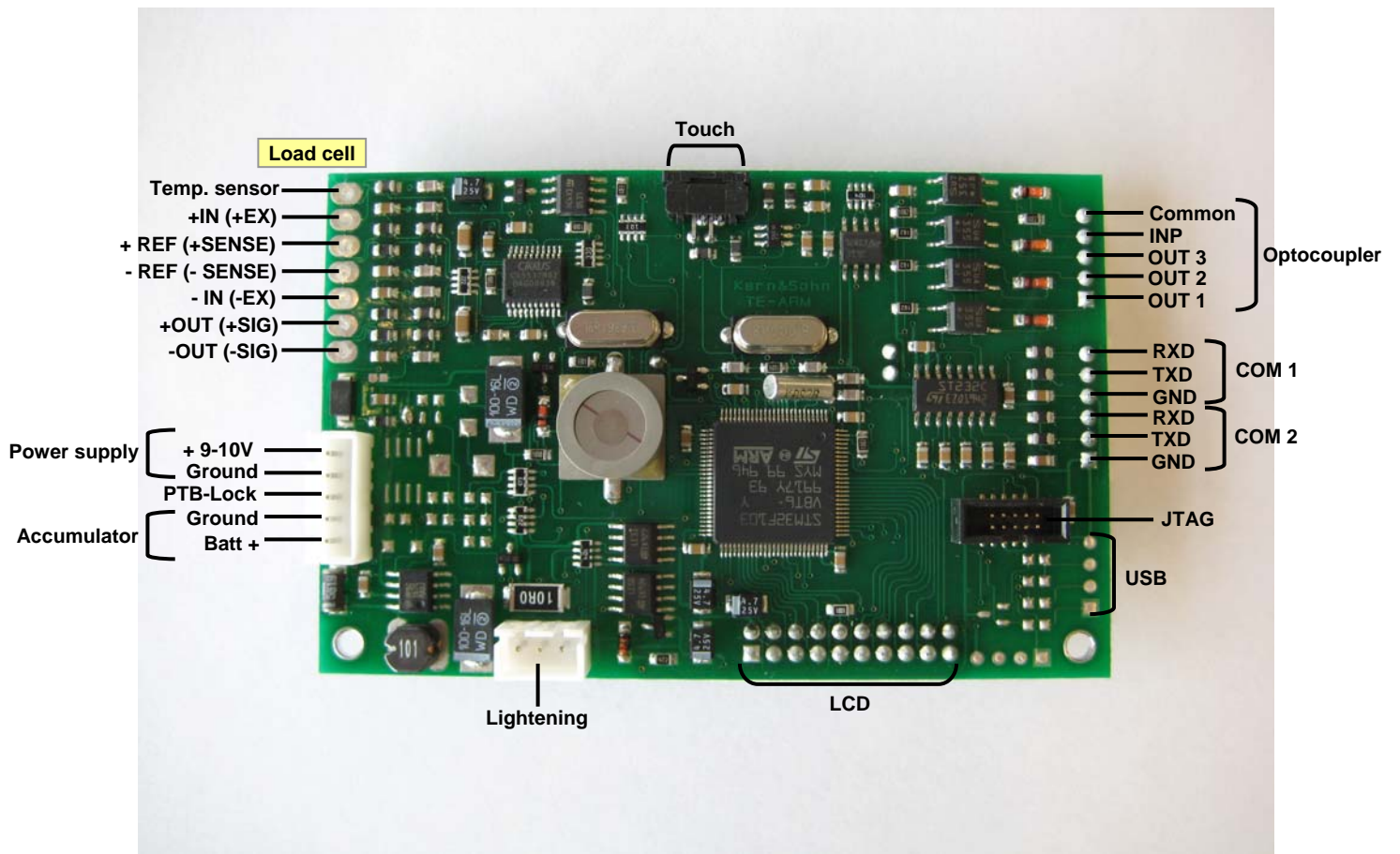


## 6.8 Remark

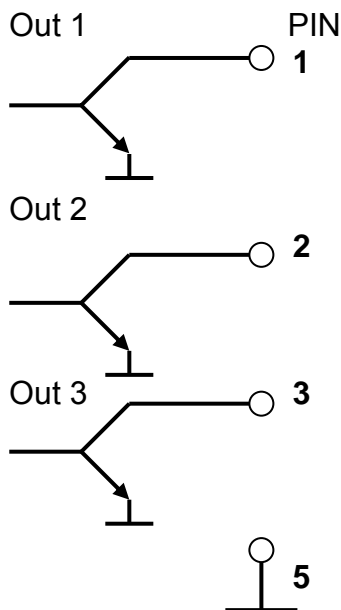
Please notice the categories [**Temperature adjust**], [**Creep**] and [**Startup creep**] were configured and used only in our production line.

Therefore it is not recommended to use them!

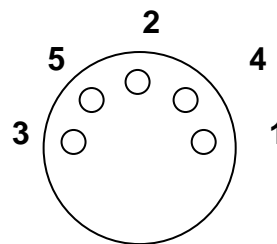
# 7 Electronics



## Optocoupler – open collectors (Digital I/O output)



Diode connecting plug 5 pol.  
Type Masei 5100 S version D



Performance data:  $V_{cemax} = 35 \text{ V DC}$   
 $I_{cmax} = 80 \text{ mA DC}$

Pin 4 is not allocated.