



# KERN ITS/ITT-Pxx

Version 2.0 4/2007

## Operating Manual

### Weighing balance coupling via RS232

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## 1 Introduction

A counting system allows the construction of a dual balance assembly for piece counting.

Any KERN ITS or ITT balance can be used to function as a "master balance" that controls the dual balance assembly and on which piece counting takes place. A KERN balance of the type FTC / 572 / EW / PCB serves as reference balance and is used to determine the weight of a single piece.

Due to their high resolution, KERN balances FTC / 572 / EW / PCB used as reference balance allow a very precise determination of the reference weight for single pieces of low weight.

In doing so, ensure that the smallest piece weight of the counting assembly is greater than the readability of the reference balance by a factor of 5.

## 2 Basic structure

The counting system consists of the following components:

- Interface cable TS-A14 (FTC / 572 / PCB) or TS-A15 (EW)
- Bulk weighing balance type KERN ITS or ITT
- Reference weighing balance type KERN FTC / 572 / EW / PCB

## 3 Important Notes

This installation and operating manual merely describes the installation of the dual balance assembly and its most important operating steps. We assume that you are already familiar with the operation of both weighing balances. For corresponding information please refer to the operating instructions of the balances used.




## 4.2 Balance settings


### 4.2.1 Setting the ITS/ITT as bulk weighing balance

Keep  key pressed down until “Code” appears.


To enter code: Press 3x  key and then press  key once

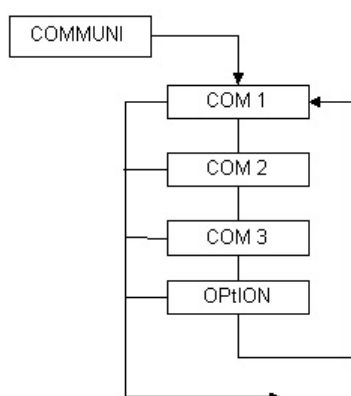
#### Key functions during menu setting:

 = YES / import new setting

 = NO / Scroll through menu items

“SCALE” appears on the display; press the  key repeatedly until “COMMUNI” is displayed.

Press the  key to confirm and select the interface to be set (**COM 1/ COM 2**).



**COM 1:** Connection of peripherals of any kind (reference or bulk weighing balance, printer, PC)

**COM 2:** If a Y-cable is used, this additional interface may be used for the connection of a printer or PC.

To determine whether this second balance is to be used as reference or bulk weighing balance, go to the menu of the ITS / ITT balance. Usually the second balance is used as reference balance, whilst piece counting is carried out on the ITS / ITT.

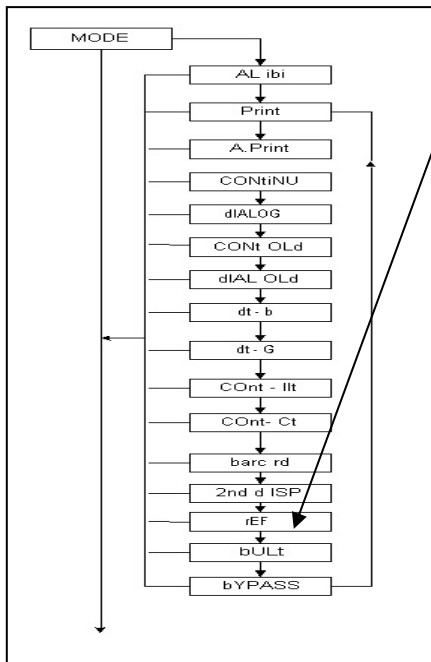
To select the interface, press the  key and “Mode” will appear on the display.

To change the settings in the “Mode” menu, press the  key again.

#### Attention:

Settings may differ according to application. For details please refer to the flow chart below.

The ITS/ITT serves as bulk weighing balance and a reference balance has to be connected:



Repeatedly press the **TARE** key until “rEF” appears in the menu. Press the **PRINT** key, to import the setting. Press the **TARE** key repeatedly until “End” appears.

To store the new setting, press the **PRINT** key twice. For details of how to set the interface parameter see description in chapter 4.3.

### Exception: FTC

If the FTC is used as reference balance, it is also possible to exchange the reference balance and bulk weighing balance. For this purpose you must change the settings “reF” – „dIALOG“.

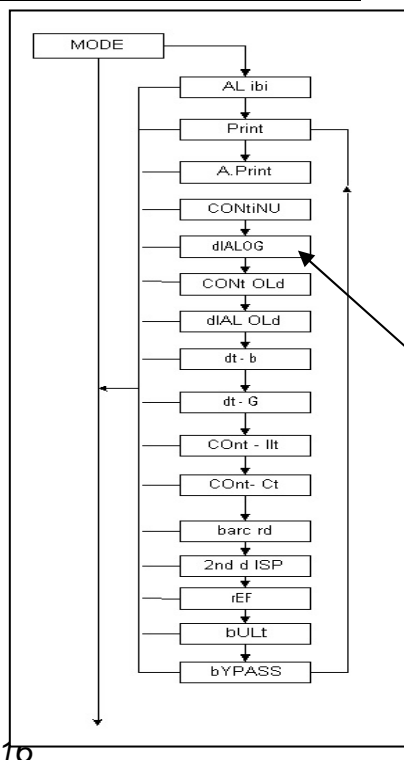
Usually the second balance is used as reference balance, whilst piece counting is carried out on the ITS/ITT.

Setting:     FTC = „ref“  
               ITS/ITT= „dialog“

## 4.2.2 Settings for reference balance

The various reference balances require the settings shown below:

### Reference balance FTC:



Invoke menu, on the display appears "SCALE"; press the **TARE** key repeatedly until “COMMUNI” appears. Press the **PRINT** key and select the interface ( **COM1** ) to be set. Press **PRINT** key, „Mode“ appears, then press **PRINT**.

Press the **TARE** key repeatedly until “dIALOG” appears. To import the setting “dIALOG” press the **PRINT** key. Press the **TARE** key repeatedly until “End” appears. To store the new setting, press the **PRINT** key twice.

For details see the operating instructions for the Kern FTCxx.

The setting of the interface parameters is described in chapter 4.3.

### Reference balance EW:

Set the interface of the EW to "6.o.c7"( EW-N : „71.o.c.7“ ) and the Baud rate to **1200** .

For details please refer to the operating instructions for the Kern Ewxx.

For details of how to set the interface parameter see description in chapter 4.3.

### Reference balance 572:

Ensure that the settings "AUTOPRINT"(OFF) and "AUTOPRINT PC"(OFF) are disabled. Baud rate: **9600**

For details see operating instructions for Kern 572-xx

For details of how to set the interface parameter see description in chapter 4.3.

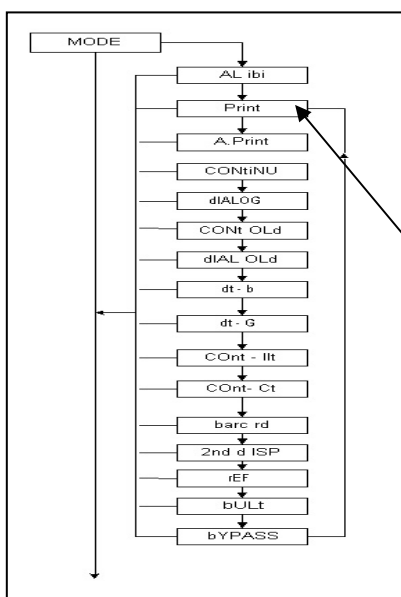
### Reference balance PCB:

For this purpose select menu item **AU PC** in the **PR** menu and select setting **9600** in the **bAUd** menu.

For details and navigation in this menu please refer to the operating instructions for the weighing balance.

For details of how to set the interface parameter see description in chapter 4.3.

## 4.2.3 Connecting a printer or PC to the bulk weighing balance (ITS/ITT)



If a Y-cable is used, the printer is installed under COM 2.

"SCALE" appears on the display; press the **TARE** key repeatedly until "COMMUNI" is displayed.

Press the **PRINT** key now and select the interface (**COM 1/ COM 2**) to be set. Then confirm with the **PRINT** key; "Mode" appears.

To change the settings in the "Mode" menu, press the **PRINT** key again.

Press the **TARE** key repeatedly until "Print" (original setting) appears. Press the **PRINT** key, to import the setting. Press the **TARE** key repeatedly until "End" appears. To store the new setting, press the **PRINT** key twice.

For details of how to set the interface parameter see description in chapter 4.3.

### 4.3 Setting interface parameters (ITS/ITT)

After allocating the interfaces (**COM1 /COM 2**) in chapter 4.2., set the parameters according to the chart below.

After selecting the desired interface with the **PRINT** key, “**MODE**“ will appear on the display. Now press **TARE** key several times until “**PARAMEt**“ appears.

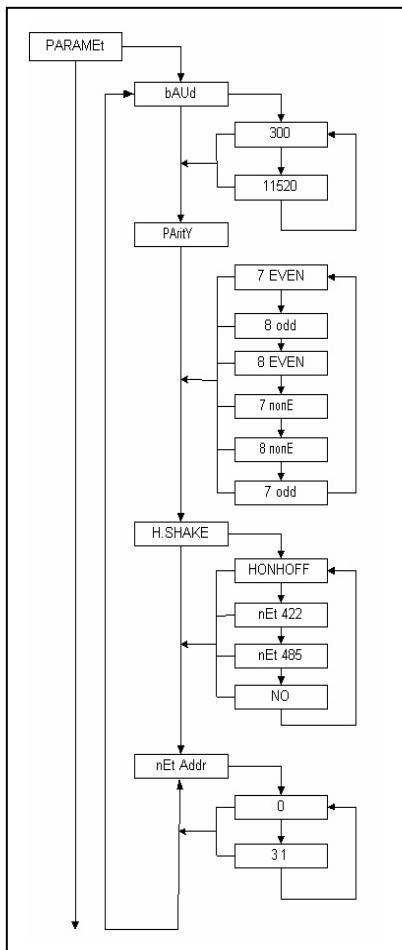
To change setting in the “**PARAMEt**“ menu, press the **PRINT** key again.

Now you can select and change the interface parameters one at a time (**Baud / Parity / H.Shake**) (See diagram below).

#### Key functions during menu setting:

**PRINT** = YES / import new setting

**TARE** = NO / Scroll through menu items



#### Reference balance FTC:

- Baudrate :               **9600**
- Parity                   **8 BIT NO**
- Protocol:               **XON/XOFF**

#### Reference balance EW:

- Baud rate :               **1200**
- Parity                   **8 BIT NO**
- Protocol:               **XON/XOFF**

#### Reference balance 572 / PCB:

- Baud rate :               **9600**
- Parity                   **8 BIT NO**
- Protocol:               **XON/XOFF**

## 5 Piece counting with KERN ITB/ITT and reference balance

The weighing balance symbol on the top right of the display indicates the active weighing balance:


$\Delta\Delta$  1 = ITS/ITT balance     $\Delta\Delta$  2 = Reference

### 5.1 Determining reference values


To count pieces, the balance requires the weight of a specific quantity of pieces as a reference. In doing this, pay attention that the pieces are not dirty and do not have too great a tolerance amongst them.


The greatest possible number of pieces should be used for the determination of reference values (20, 50 or, ideally 100). Thus, the dispersion of single pieces has a reduced effect and results in a more accurate reference weight determination. If using a weighing balance with numeric keyboard and known piece weight it is also possible to enter this directly.

#### Switching over the reference balance:


Press the  key on the bulk weighing balance and keep it pressed down for a few seconds. The display briefly shows “**ref.Scal. 1**” (Determining reference 1) .

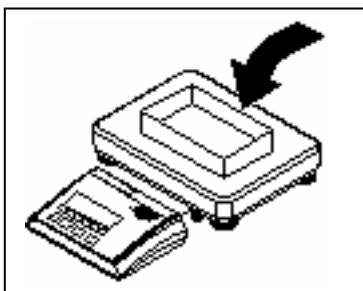
Now it is possible to determine the reference on the **ITS/ITT** (bulk weighing balance).

If the  key is pressed and held for a longer time the balance will switch back to “**ref.Scal.2**”(Reference determination on balance 2).

The  key can be used to switch between weighing plate 1 (reference balance) and weighing plate 2 (bulk scales).


#### Procedure:

Select weighing plate 1 (reference balance) by pressing the  key.





Determining the reference piece number:

Place the box used for counting the reference piece number on the balance plate.

Pressing the  key will reset the balance to zero.


## Select the reference piece number:

If exactly **10 pieces** were put down, press the  key.

If a **different number of pieces** were put down, press the  key repeatedly until the display above the key has changed to the desired reference piece number ( 5 preset reference piece numbers). The variable reference piece number remains stored until further changes are made.


If balances with numeric keyboard are used, the reference piece number can be entered numerically via the keyboard.

**Information:** If the reference weight leads to inaccurate counting results, it is possible to optimise the reference piece number. For correct function please refer to the operating instructions for the balance (chapter "Automatic Reference Optimisation").

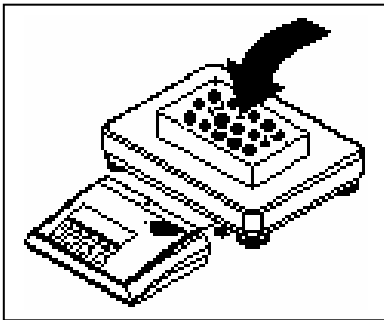
Once the reference weight has been stored, it is possible to switch at any time between the piece number and weight display by pressing the  key.

To select weighing plate 2 press the  key.


Place the box to be filled with the bulk good on the weighing tray.

Pressing the  key will reset the balance to zero.

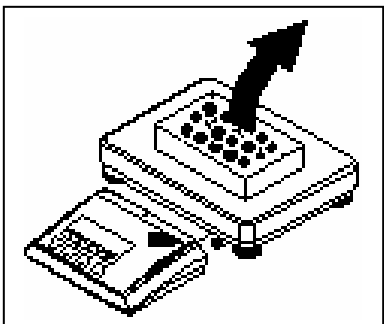
## 5.2 Count pieces into box




The number of pieces contained in the box will be displayed.

You can switch between piece number and weight display at any time by pressing the  key.

## 5.3 Counting pieces that are removed from a container



To count out pieces from the box, first determine the reference weight and then place the box containing the bulk good on weighing plate 2.

Press the  key and zero will appear on the display.

It is now possible to remove pieces from the box. The number of removed pieces is shown on the display. (with preceding minus sign)

## 6 Instant help

If mistakes are made during reference determination the **KERN – Balances** revert to normal weighing mode. This may be due to the following:

- The weighing result of the reference determination is not stable or the weight of the chosen reference piece number is too small
- The reference balance is not turned on.
- The appliances are incorrectly cabled or the connections are interrupted.
- The interfaces of the balances are incorrectly configured.

For information about error messages and troubleshooting please see the operating instructions for your weighing balance.