



Operating Instruction



Version 1.0 10/2012 EN

Industry Counting Balances - Series TJ-Y

TJ3KY-1	TJ6KY-2	TJ15KY-5	TJ30KY-10
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To ensure the correct application of the balances of this series, please read these instructions carefully and properly preserved for future reference.

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1 Technical data

Series	TJ3KY-1	TJ6KY-2	TJ15KY-5	TJ30KY-10
Weighing range (max)	3 kg	6 kg	15 kg	30 kg
Readability (d)	1 g	2 g	5 g	10 g
Tare range	3 kg	6 kg	15 kg	30 kg
Linearity	± 1 d	± 1 d	± 1 d	± 1 d
Reproducibility	1 g	2 g	5 g	10 g
Verification class	III	III	III	III
Calibration weight	2 kg	5 kg	10 kg	20 kg
Minimum weight*	10 d	10 d	10 d	10 d
Stabilization time	< 2 s	< 2 s	< 2 s	< 2 s
Reference weight min.	20 d	20 d	20 d	20 d
Minimum piece weight**	1 g	2 g	5 g	10 g
Warming up time	30 min	30 min	30 min	30 min
Reference piece numbers for piece count	freely selectable			
Weighing unit	g (gram), lb (pound)			
Dimensions (W x D x H)	300 (W) × 320 (D) × 105 (H) mm			
Weighing plate (∅ / W x D)	300 x 220 mm			
Operating temperature	+ 5 ~ + 35°C			
Humidity	≤ 80% R.H			
Interface	RS 232			
Power supply ***	Mains power adapter input: AC220V±10% 50Hz±1Hz output: DC12V/600mA or DC 6V / 4Ah Accumulator operating time ca. 80 hrs. / charging time ca. 10 hrs.			
Auto power off	No			

* **Hits**: minimum weight for an accurate weighing result.

** **Hits**: minimum piece weight at counting.

*** **Hits**: Please only use the original supplied mains adapter. Otherwise there is a risk that the balance be impaired.

2 Overview

Accurate balance TJ-Y series is designed for professional counting and weighing and can be used in laboratories, production, quality control, etc. The lower part of the accurate balance consists of extruded aluminum housing while the upper part consists of a high quality plastic. This construction ensures a durable, reliable and accurate weighing. The removable stainless steel pan allows the weighing pan to be cleaned easily. The calibration of this laboratory balance is done by means of external calibration weights (automatic calibration procedure). The balance is equipped with four adjustable feet. If the balance is used in a laboratory, it can be powered by the external mains adapter (included). In case the balance is used as a mobile weighing instrument, it can be powered by internal accumulator (included). A previous tare can be performed or it is even possible to introduce the reference weight via the keyboard. RS-232 interface is available for the balance. Through the optional software weighing data can be transferred to a computer.

Description:

- **designed for professional counting and weighing.**
- high precision, sensitivity and rapid response time (< 2 Sec.)
- DMS technology and therefore is also suitable for weighing of iron, nickel or other magnetic materials.
- high quality materials and an optimized power supply.
- high reliability and long service life.
- a robust base made of powder coated aluminum cast.
- an easy-cleaning, durable and stable plastic shell.
- a removable stainless steel pan can be cleaned easily.
- with Level Indicator and adjustable feet.
- external calibration, zeroing searches, parts counting function, tare function.
- 2 Weighing units (kg, lb).
- 3 large LCD display, digit height 15 mm.
- powered by internal accumulator or external mains adapter.
- with a complete recharging is enough for an operating time of approx. 80 hours.
- An integrated RS-232-interface enables you to automatically send the weighing data to PC.

2.1 Proper Use

The balance you purchased is intended to determine the weighing value of material to be weighed. It is intended to be used as a “**non-automatic**” balance, i.e. the material to be weighed is manually and carefully placed in the center of the weighing plate. As soon as a stable weighing value is reached the weighing value can be read.

2.2 Improper Use

- Do not use the balance for dynamic weighing. In the event that small quantities are removed or added to the material to be weighed, incorrect weighing results can be displayed due to the “**stability compensation**” in the balance. (Example: Slowly draining fluids from a container on the balance.)
- Do not leave permanent load on the weighing plate. This may damage the measuring system.
- Impacts and overloading exceeding the stated maximum load (max) of the balance, minus a possibly existing tare load, must be strictly avoided. Balance may be damaged by this.
- Never operate the balance in explosive environment. The balance is not explosion protected.

- The structure of the balance may not be modified. This may lead to incorrect weighing results, safety-related faults and destruction of the balance.
- The balance may only be used under the described conditions. Other areas of use must be released by G&G in document.

2.3 Control of inspection, measuring and test equipment

As part of quality assurance the measuring-related properties of the balance and the available adjusting weight must be checked regularly. The responsible user must define a suitable interval as well as the nature and scope of this test. Information regarding the test equipment of balances and of the required test weights is available on the G & G Company - Homepage. (www.gandg.de).

3 Warranty

- The G & G Company is liable for the defects within the framework of existing legislation.
- We warrant the product manufactured by us to be free from defective material or factory workmanship and agree to repair or replace this product which, under normal use and service, disclose the defect to Bethe fault of our manufacturing, with no charge for parts and service. If we are unable to repair or replace this product, we will make a full refund of the purchase price.
- Consult the user's manual for proper instruction regarding use of this instrument. Our obligation under this warranty is limited to repairing, replacing or making refund of this test equipment which proves to be defective within 24 months from the date of original purchase.

Warranty claims shall be voided in case:



- Our conditions in the operation manual are ignored
- The appliance is used outside the described uses
- The appliance is modified or opened
- Mechanical damage or damage by media, liquids, natural wear and tear
- The appliance is improperly set up or incorrectly electrically connected
- The measuring system is overloaded

4 Basic Safety Precautions

- **Environmental conditions:** only use indoor, max. Altitude: 2000m, Operating temperature: -10 ~ +40°C, humidity of air: ≤80% R.H., Power fluctuations less than ±10%.
- Do not use the balance in any high temperature fluctuations and avoid strong airflows, vibrations and dust. The balance could never get wet and make sure that the balance is not used in an environment with extreme temperature or humidity.
- Do not use the balance in explosive conditions.
- Only use the extender cable, which with ground wire.
- If the power line cable is damaged, the appliance must be unplugged immediately and the power line cable be replaced.
- Place the balance on a stable surface and set it horizontally with the help of the adjustable feet and the spirit level.
- To avoid to damage the device, do not use at low-battery condition.

- If the balance is not to be used for a long period of time, remove the accumulator from the battery compartment to avoid leakage which may cause damage to the instrument and store the balance in a dry and well ventilated environment. The accumulator should be completely recharged every 3 months.
- The electronic balance is a precision measuring instrument and must be handled with great care. Violation of limit of weighing range or impact can cause permanent damage to the balance.
- The balance needs a warm up time for about 30 min. before using.
- Please do not use aggressive cleaning agents (solvents or similar agents), but a cloth dampened with mild soap suds. Ensure that no liquid penetrates into the device and wipe with a dry soft cloth.
- Do not overload the balance more than 20% of maximum load (Max). Do not press the pan with a hand!
- By maintenance please notice the information in [Chapter “Maintenance and Servicing”](#).
- If the balance seems not to operate properly, unplug it from the mains and do not use until checked by authorized service.
- All repairs and necessary regulations can be made by authorized personnel only.
- **COUTION: Carefully read this operation manual before setup and commissioning.**

5 Transportation and Storage

5.1 Acceptance check

When receiving the appliance, please check packaging immediately, and the appliance itself when unpacking for possible visible damage.

5.2 Packing



- Keep all parts of the original packaging for a possibly required return
- Only use original packaging for returning.
- Prior to dispatch disconnect all cables and remove loose/mobile parts.
- Reattach possibly supplied transport securing devices.
- Secure all parts such as the glass wind screen, the weighing platform, power unit etc. against shifting and damage.

6 Unpacking, Setup and Commissioning

6.1 Installation Site, Location of Use

The balances are designed in a way that reliable weighing results are achieved in common conditions of use. You will work accurately and fast, if you select the right location for your balance.

Therefore, observe the following for the installation site:

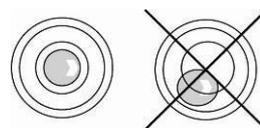
- ❖ **Major weighing deviations (incorrect weighing results) may be experienced should electromagnetic fields (e.g. due to mobile phones or radio equipment), static electricity accumulations or instable power supply occur. Change location or remove source of interference.**
- Place the balance on a firm, level surface.
- Avoid extreme heat as well as temperature fluctuation caused by installing next to a radiator or in the direct sunlight.
- Protect the balance against direct draughts due to open windows and doors.

- Avoid jarring during weighing.
- Protect the balance against high humidity, vapors and dust.
- Do not expose the balance to extreme dampness for longer periods of time.
- Non-permitted condensation (condensation of air humidity on the appliance) may occur if a cold appliance is taken to a considerably warmer environment. In this case, acclimatize the disconnected appliance for ca. 2 hours at room temperature.
- Avoid static charge of goods to be weighed or weighing container.

6.2 Unpacking / Installation

Carefully remove the balance from the packaging, remove plastic cover and setup balance at the intended workstation.

1. Take the balance and supplied accessories (a feeder, pan elements) out of the box.
2. Place the balance on a stable ground not affected by mechanical vibrations and airflows.
3. Level the balance with foot screws so that the air bubble in water-level is in the middle.
4. Plug the adapter to the power socket at the back of the balance.
5. Connect the power adapter to an AC220V \pm 10% 50Hz \pm 1Hz outlet.



Scope of delivery:

- Balance (incl. internal accumulator)
- Stainless steel weighing pan on plastic support
- AC adapter
- Operating Instructions

6.3 General power supply

If the balance is used in a laboratory, it can be powered by the external mains adapter (included). In case the balance is used as a mobile weighing instrument, it can be powered by internal accumulator (included). The accumulator is charged via the delivered adapter.

If the balance is not used for a long time, remove the battery and store them separately. Leaking battery liquid could damage the balance.

6.3.1 Battery power supply

The charging time until complete recharging is about 10hrs. The operating time is approx. 80 hours

Strictly observe the following notes:

- A complete discharge of the battery should be avoided, to prevent possible damage.
- When battery symbol indicates that the capacity of the battery is nearly exhausted, connect the power adaptor as soon as possible to change the battery. Otherwise, the battery may be damaged.
- Connect to AC power, the battery symbol “” flashes, during the battery charging. When the battery is fully charged, the indicator disappeared.
- If the balance is not to be used for a long period of time, remove the accumulator from the battery compartment to avoid leakage which may cause damage to the instrument. The accumulator should be charged at regular intervals (every 3-6 months).

Charging the battery

Charge the battery only with the supplied AC adapter.

Before the first use, the battery should be charged by connecting it to the mains power supply for at least **15 hours**.

- When the battery symbol indicates that the capacity of the battery is nearly exhausted, connect the power adaptor as soon as possible to charge the battery.
- Whilst working in battery mode, the current battery status will be displayed with the battery symbol.
- The balance can be used during charging.
- Charge the battery at a temperature ranging between 5°C and 35°C.

6.3.2 Mains connection during rechargeable battery operation

The balance can be used during charging without interference. Before connecting the mains adapter check if the printed voltage value is the same as the local supply voltage. Charging of accumulators is made automatically, when balance is connected to power supply (also during weighing).

Please only use the original supplied mains adapter. Otherwise there is a risk that the Balance be impaired.

6.3.3 Accumulator exchange

Take off the weighing pan and turn the balance carefully upside down. Loosen the screws on aluminum base and remove the plastic shell as well. Loosen the screws on the accumulator holder and remove the old accumulator and connect on a new, identically constructed accumulator. Taking extreme care that the polarities plus (+) and minus (-) is observed. Insert the accumulator in a manner that it cannot slip and ensure that the cables are not squeezed. Fix the accumulator holder with screws, and close the plastic shell and fix the screws.

6.4 Initial Commissioning

In order to obtain exact results with the electronic balances, your balance must have reached the operating temperature (warming up time 30 min.). During this warming up time the balance must be connected to the power supply (mains, accumulator or battery).

The accuracy of the balance depends on the local acceleration of gravity.

Please read the information carefully in [chap. "Adjustment"](#).

6.5 Adjustment

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). This adjustment process must be carried out for the first commissioning, after each change of location as well as in case of fluctuating environment temperature. To receive accurate measuring values it is also recommended to adjust the balance periodically in weighing operation.

6.6 External calibration

Adjustment with recommended adjustment weight (default setting) Weight value of the required adjustment weight sees [chap. 1 "Technical data"](#). Weights of different nominal values may be used for adjustment but are not optimal for technical measuring. Info about adjustment weights can be found on the Internet at: www.gandg.de

Operations sequence:

- Observe stable environmental conditions. A warming up time (30 min.) is required for stabilization.
- Turn on the balance with [ON/OFF]-Key. The balance will carry out a self-test. As soon as all the three display windows show "0", your balance is ready to weigh.
- Ensure that there are no objects on the weighing plate.
- Then press the [TARE]-Key, keep it pressed and press the [Kg/lb]-Key, until the acoustic signal gets mute and the weighed value "XXX g" (e.g.: 5000.0 g means 5 kg) for the required adjustment weight appears in **UNIT-WEIGHT Display**. In **WEIGHT-Display** appears "CAL".
- Carefully put the required adjustment weight in the center of the weighing plate. Adjustment will be carried out automatically.
- After successful adjustment the balance automatically returns to weighing mode.
- Take away the adjustment weight, the all three displays show "0".
- If an error message "C---F" is displayed in the event of an adjustment error or incorrect adjustment weight. Wait until the balance is again in weighing mode and repeat the adjustment procedure.

7 Operating elements



- | | | | |
|------------------|----------------------|--------------------|--------------------|
| 1. Weighing pan | 2. Battery indicator | 3. Level indicator | 4. Function-button |
| 5. Decimal point | 6. Delete key | 7. Number keys | 8. Adjustable feet |
| 9. LCD display | 10. RS 232 Interface | 11. Power socket | |

7.1 Overview of display



7.1.1 WEIGHT Display

Here the weight of the load is displayed in [g/kg].

The symbols show:

	Battery status
g	Stability display in [g]
o	Zeroing display

7.1.2 UNIT WEIGHT Display

Here, the reference weight of a sample is displayed in [g]. This value is either entered by user or calculated by balance.

The arrows beside the symbols show:

SAMP	Number of pieces placed on balance too small
UNIT	Reference weight placed on balance too small

7.1.3 QUANTITY Display

Here, all the pieces placed on balance are immediately displayed by number.

The arrows beside the symbols show:

M+	Data in the summation memory
----	------------------------------

7.2 Keyboard overview



Key	Function
0-9	• Number keys
.	• Decimal point
CE	• Delete key
ON/OFF	• Power ON/OFF
Kg/lb	• Weighing units
UNIT W.T.	• Numeric entry reference weight • Display reference weight stored last
SMPL	• Store reference weights in memory • Call stored reference weights
TARE	• Taring key • Enter numerical tare
QTY PST	• Enter target number of pieces
PST CE	• Delete target number of pieces
M+	• Addition in total memory • Call up total memory
MC	• Delete summation memory
LIGHT	• Backlight setting key

8 Basic Operation

After new purchase of the balance or after a long storage, you have to calibrate the balance before the first commissioning. Level the balance with the adjustable feet horizontal until the air bubble in the level is in the center of the Level Indicator. Give the balance after changing the location a warm-up time min. 30 min. before using. This time is necessary for the balance to adapt to the eventual temperature.

8.1 ON/OFF - [Power On/OFF]

Press the [ON/OFF] button to turn on the balance. The display shows the message "ON". Then the max. weighing range is displayed. The balance will carry out a self-test (F----1 to F----9). When the "0" in all the three displays appears, the balance is ready for operation.

Press the [ON/OFF] button and keep it pressed, until the display shows the message "OFF". The balance will switch off then. Restart the balance by pressing the [ON/OFF] key.

8.2 TARE

When the pan is empty and the weight displayed isn't "0", press [TARE]-Key to reset display to "0". The **WEIGHT-Display** shows the zero symbol "o".

The dead weight of any weighing container may be tared away by pressing a button, so that the following weighings show the net weight of the goods to be weighed.

8.2.1 Determination of the tare weight by weighing

Place the weighing container and press the [TARE] button. After standstill control the zero display appears. The weight of the container is now internally saved. Weigh the material, the net weight will be indicated. The weight of the weighing container will be displayed as a minus number after removing the weighing container. The tare weight is saved until it is deleted. Remove the load from the balance and press the [TARE] button. The tare procedure can be repeated as many times as necessary, for example with initial weighing of several components for a mix (add-on weighing). The limit is reached when the total weighing range capacity is full.

8.2.2 Numerical input of tare (PRE-TARE)

If the weight of the weighing container is known, you can PRE-TARE or subtract the weight from the weight value as well. Place the container with the goods on the weighing pan. Enter the tare weight via the number keys and confirm the value by pressing the [TARE]. The display now shows the net weight of the goods.

Case of an empty weighing pan, then the tare weight is indicated as a negative value. Then put on tare container + goods to be weighed. The net weight of the goods to be weighed is displayed.

To delete the value, press the [TARE]. The display shows a zero value, the tare mode is disabled.

8.3 Pieces counting

With parts counting you can either count parts into a container or remove parts from a container. Before the balance can count parts, it must know the average part weight (i.e. reference). Proceed by putting on a certain number of the parts to be counted. The balance determines the total weight and divides it by the number of parts, the so-called reference quantity. Counting is then carried out on the basis of the calculated average piece weight.

As a rule: The higher the reference quantity the higher the counting exactness

When piece counting function is active, the single weight of a piece is determined by the balance, but if value is known, it can be entered via the keyboard. If a number of pieces is placed on the balance, the balance will be able to show the weight, the reference weight as well as the amount of pieces placed on it.

8.3.1 Determination of the reference weight by weighing

Follow these steps:

- a) Set balance to zero and tare, as required.
- b) Place a known number of parts on the balance as reference weight.
- c) If the **WEIGHT-Display** is stable, enter the number of parts via number keys and confirm by pressing the **[SMPL]** key.
- d) After successful reference determination the current quantity is displayed on the **QUANTITY-Display**. The **UNIT-WEIGHT Display** now shows the calculated reference weight.
- e) Now you can place the parts to be counted onto the weighing plate. All quantity parameters of your goods to be weighed are displayed.
- f) After the use is completed, press the **[CE]** button to delete the memory, the balance will automatically return to the weighing mode.

8.3.2 Numeric entering of the reference weight

If you know the reference weight, you can enter this via number keys.

Follow these steps:

- a) Set balance to zero and tare, as required.
- b) Enter reference weight via number keys and confirm by pressing the **[UNIT W.T.]** key.
- c) After successful reference weight determination the reference weight is displayed on **UNIT-WEIGHT Display**.
- d) Now you can place the parts to be counted onto the weighing plate. All quantity parameters of your goods to be weighed are displayed.
- e) After the use is completed, press the **[CE]** button to delete the memory, the balance will automatically return to the weighing mode.

8.4 Count with tolerance control

This function can be used to program a target number of pieces. Exceeding the target value is indicated by an audio-visual signal.

- Set the upper limit value for target item number via number keys and confirm it by pressing the **[QTY PST]** key. Then the value will be flashing on the **QUANTITY-Display** for about 10 sec before it disappears.
- Now the balance is ready for tolerance check.
- Place the load, wait until the acoustic signal sounds and the **UNIT-WEIGHT Display** shows "H".
- The limit value can be reset in any time. Delete the limit value by pressing the **[PST CE]** key.

8.5 Summation

The balance is equipped with a summation memory used for adding up of identical counted parts to total quantity and total weight. This function can be also used without pieces counting.

- Place weighing goods.
- Wait for stability display, then press **[M+]**. The displayed values are added into the summation memory and edited. The total weight, number of weighing procedures "≡X≡" as well as the quantity of items will be displayed for about 8 sec.
- Remove the weighed good. More weighed goods can only be added when the display \leq zero.

- Add more weighed goods as described before. Please note that the weighing system must be unloaded between the individual weighing procedures.
- You can repeat this process until the capacity of the weighing system is exhausted.
- There are 99 possible addition procedures with a total quantity to 99999. By the exceeding of the display's range, shows the display error message "F----1".
- When the pan is empty and the weight displayed is "0", press [M+] Key to call-up the total weight, number of weighing procedures and total number of pieces.
- Delete the memory by pressing the [MC] key.

8.6 Kg/lb - [Weighing unit selection]

Under the weighing mode, use the [Kg/lb]-key to choose weighing units: kg (kilogram) and lb (pound).

$$1 \text{ kg} = 2.2046226 \text{ lb}$$

8.7 LIGHT - [Backlight Setting]

Press the [LIGHT] key to change the display's backlight mode.

[b on] - Background illumination on. Display rich of contrast which can also be read in the darkness.

[b OFF] - Backlight switched off to save battery.

[b AUto] - This display will appear backlit for weight value is not stable. When the weight value is stable, the display will be extinguished 3 seconds later.

9 Displayinformation / Error messages

F----1	Date over display scope
F----2	A/D-switch disorder
F----3	Function key disorder
F----5	Sensor signal disorder / Load Cell defect
F----L	Lower zero position of sensor signal
F----H	Weighing capacity is exceeded
C----F	Calibration error, instability or not at zero point during calibrating
C----H	Calibration error, items on the pan or at higher zero point during calibrating
E-----	Storage calibration data error, re-calibration is necessary
-----	Zero point of the balance disorder / mechanical defect of the balance

o	zero point symbol, when the pan is empty and the weight displayed is "0"
g	display shows weighing unit g
kg	display shows weighing unit kg
lb	display shows weighing unit lb (1lb = 0.4536kg)



The battery symbol indicates the current battery status. When the battery symbol indicates that the capacity of the battery is nearly exhausted, connect the power adaptor as soon as possible to change the battery. A complete discharge of the battery should be avoided, to prevent possible damage. Connect to AC power, the battery symbol "" flashes, during the battery charging. When the battery is fully charged, the indicator disappeared.

UNIT-WEIGHT / QUANTITY Displayinformationen / Error messages

➤ UNIT-WEIGHT Display

- CAL- balance is under external calibration function
- ≡X≡ number of weighing procedures (count with tolerance control)
- H exceeding of limit value for target item number (acoustic signal sounds)
- ◀ **SAMP:** When sampling weight is less than the minimum sampling weight, should increase the quantity of samples, until the indicator goes out. The higher the reference quantity the higher the counting exactness
- ◀ **UNIT:** Average reference weight or the set reference weight is less than the minimum piece weight. The balance cans still working to count, but may cause the deviation of a sample from its "theoretical value".

➤ QUANTITY Display

- F-----1 exceeding of the display's range
- ◀ **M+:** summation function is using.



Should other error messages occur, switch balance off and then on again. If the error message remains inform manufacturer.

10 Interface RS 232C

An integrated RS-232-interface enables you to automatically send the weighing data to PC. Relevant codes and control commands are specified as following.

10.1 Technical Data

- 8-bit ASCII Code
- 8 data bits, 1 stop bits, no parity bit
- Bit rates supported include: 600, 1200, 2400, 4800 and **9600** bit/s. (default setting is 9600)
- Miniature plug is necessary (9 pin D-Sub)
- For operation with interface faultless operation is only ensured with the correct G&G – interface cable (max. 2m)

10.2 Description of the data transfer

Symbols

WT	WEIGHT Display
UW	UNIT-WEIGHT Display
QT	QUANTITY Display
Blank	Blank
-/+	minus-sign / for positive numbers this is output as blank
Data	value of weight / decimal, depending on weighing value
Unit	Weighing units / Pcs.
CR	Carriage Return
LF	Line Feed

Data format: 41-bits Output (ASCII Code):

WEIGHT Display:

WT	Blank	-/+	Data	Unit	CR
2 bits	1 bit	1 bit	7 bits	3 bit	1 bit

UNIT-WEIGHT Display:

UW	Blank	Data	Unit	CR
2 bits	1 bit	6 bits	2 bits	1 bit

QUANTITY Display:

QT	Blank	Data	Unit	CR	LF
2 bits	1 bit	5 bits	4 bits	1 bit	1 bit

Example:

WEIGHT-Display: 12.345 kg, UNIT-WEIGHT- Display: 12.34, QUANTITY- Display: 1000

Output:

WT□□□12.345□kg↓UW□□12.34□g↓QT□□1000□Pcs↓← 41 bits

The display value can be printed out by connecting an optional printer and pressing.

Printout example:

WT 12.345 kg
 UW 12.34 g
 QT 1000 pcs

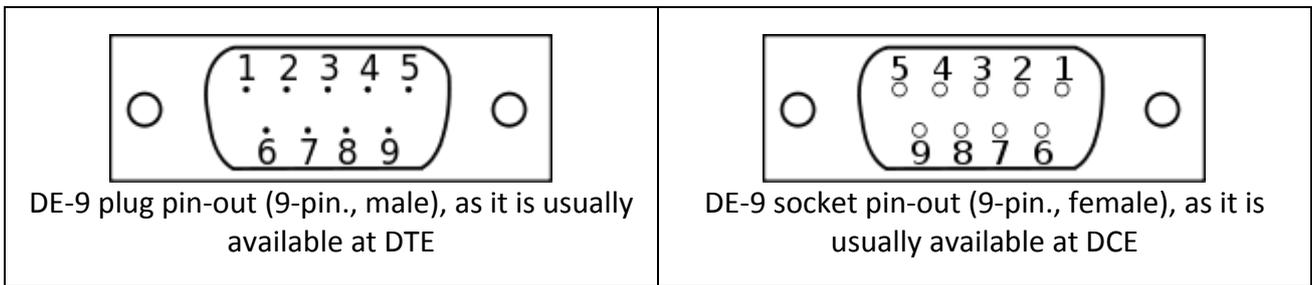
10.3 Remote control instructions

Via the RS232 data interface, the computer can control the balance with subsequent commands.

If the transmit / device setting is 27 (27=1B_{hex}, default setting), the remote control commands are sent to the balance by ASCII code:

- 1BH+70H (ASCII Code p): sending data (Print)
- 1BH+71H (ASCII Code q): calibration function is active (CAL - Key)
- 1BH+72H (ASCII Code r): counting function is active
- 1BH+73H (ASCII Code s): weighing unit selection
- 1BH+74H (ASCII Code t): Taring (TARE - Key)
- 1BH+75H (ASCII Code u): display's backlight setting (LIGHT - Key)

10.4 RS232 Pinout (9-pin D-Sub)



DTE - data terminal equipment (Terminals resp. computer)

DCE - data circuit-terminating equipment (Balance)

Signal			Pin	Origin	
Abbreviation	Name	Typical purpose	DE-9	DTE (e.g. PC)	DCE (e.g. Balance)
RxD	Receive Data	Carries data from DCE to DTE.	2	Input	Output
TxD	Transmit Data	Carries data from DTE to DCE.	3	Output	Input
GND	Ground		5	-	-

Application Example:

If the setting is C3---2, C4---27 (default setting), the codes shown in VB as following:

```

MSComm1.Settings = "600,n,8,1"
MSComm1.Output = Chr(&H1B) + Chr(&H70)           'sent a print commando
'or
MSComm1.Output = Chr(27) + Chr(112)
'or
MSComm1.Output =Chr(27) +"p"
Do
    DoEvents
Loop Until MSComm1.InBufferCount = 14
a = MSComm1.Input
Print a
    
```

Drivers and software can be free downloaded on our homepage.

www.gandg.de

11 Configuration & User Menu

The settings of the balance can be changed in the setting menu. This way, the balance can be adjusted to individual weighing requirements. By the factory the user menu has been set in a way that normally no more changes must be made, only at special conditions of use.

Overview:

In the off state press the [Kg/lb] button and keep it pressed, press the [ON/OFF] button turn on the balance. Now the balance is accessed to the setting menu. Using the [Kg/lb] button the individual menu items (C1-C4) can be selected one after the other. Press the [TARE] button to change the setting value. After all points have been configured, returns the balance automatically into weighing mode.

a) C1 = sensitivity setting - values: 0 1 2 3 4

The higher the value, the lower the sensitivity and higher stability.

Filter 0: Setting for dispensing.

Filter 1/2: Sensitive and fast, very quiet using location.

Filter 3/4: Robust but slow, busy using location.

Default setting is 2 or 1.

b) C2 = filtering strength setting - values: 0 1 2 3

The higher the value, the lower the sensitivity and higher stability.

Filter 0: Setting for dispensing.

Filter 1/2: Sensitive and fast, very quiet using location.

Filter 3: Robust but slow, busy using location.

Default setting is 2 or 1.

c) C3 = serial port setting – transmission speed (RS-232)

2(600), 3(1200), 4(2400), 5(4800), 6(9600) - Default setting is 6.

d) C4 = device number / communication setting (RS-232)

Press [TARE] button changes the value smaller. Press [M+] button changes the value bigger. The number corresponds to the first data signal to the command control of the computer.

Default setting is 27 (1Bhex).

e) Save settings

After all points have been configured, press [Kg/lb] button returns the balance automatically into weighing mode.

f) Restore the factory settings

In the off state press the [TARE] button and press the [ON/OFF] button turn on the balance, keep the [TARE] button pressed until the balance returns automatically into weighing mode. All the parameters will be reset to default settings. Please re-calibration the balance before using.

12 Maintenance and Servicing

12.1 Cleaning

Before cleaning, please disconnect the appliance from the operating voltage.

Please do not use aggressive cleaning agents (solvents or similar agents), but a cloth dampened with mild soap suds. Ensure that no liquid penetrates into the device and wipe with a dry soft cloth.

Loose residue sample/powder can be removed carefully with a brush or manual vacuum cleaner.

Remove spillages immediately.

12.2 Maintenance and repair

The appliance may only be opened by trained service technicians who are authorized by G&G.

Before opening, disconnect from power supply.

12.3 Disposal

Disposal of packaging and appliance must be carried out by operator according to valid national or regional law of the location where the appliance is used.



- According to legal regulations it is forbidden to dispose electronic equipment in waste containers.

- Please return wasted balance to the point of purchase or other company specialized in recycling of waste electronic components.

13 Instant help

Failure	Possible Cause
The display does not light up.	The balance is not switched on.
	The mains supply connection has been interrupted (mains cable not plugged in/faulty).
	Power supply is interrupted.
	(Rechargeable) batteries are inserted incorrectly or empty.
	No (rechargeable) batteries are inserted.
The displayed weight is constantly changing	Draught /air movement.
	Table / floor vibrations.
	Weighing plate has contact with other objects.
	Electromagnetic fields / static charging (choose different location/switch off interfering device if possible).
The weighing result is obviously wrong	The display of the balance is not at zero.
	Adjustment is no longer correct.
	Great temperature fluctuations.
	Warm-up time was ignored.
	Electromagnetic fields / static charging (choose different location/switch off interfering device if possible).
F----L	Lower zero position of sensor signal (re- Adjustment).
F----H	Weighing capacity is exceeded.
C----L	Lower zero position of sensor signal (re- Adjustment).
C----F	Calibration error, instability or not at zero point during calibrating.
C----H	Calibration error, items on the pan or at higher zero point during calibrating.
More Information see chap. "Displayinformation / Error messages")	

Should other error messages occur, switch balance off and then on again. If the error message remains inform manufacturer.

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