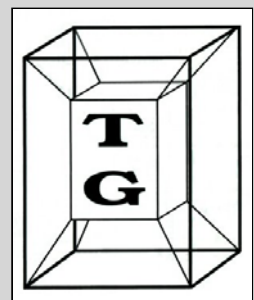


TG 310CS

Coin Counting - and Sorting Machine

Operating Instructions



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Subject to modifications
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Safety

- Please read these operating instructions and especially the following safety regulations before installing the machine and putting it into operation.
- Keep these documents for other users or later holders.
- The producer is not responsible for damages due to disregard of the following information.

Intended Use of the Machine

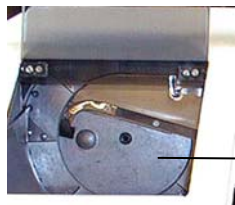
- The coin sorting and counting machine TG 310CS may only be used for counting and sorting coins.
- Do not use wet or damp coins and do not drop any foreign substances, e.g. clips into the machine, because it could be damaged.

Sources of Danger



Warning

Do not grip into the coin hopper while machine is running, the rotating coin disk could hurt your fingers.



coin feed



Warning

Stop the machine before clearing any coin jams or removing other objects in the area of the coin hopper or the sorting rail.

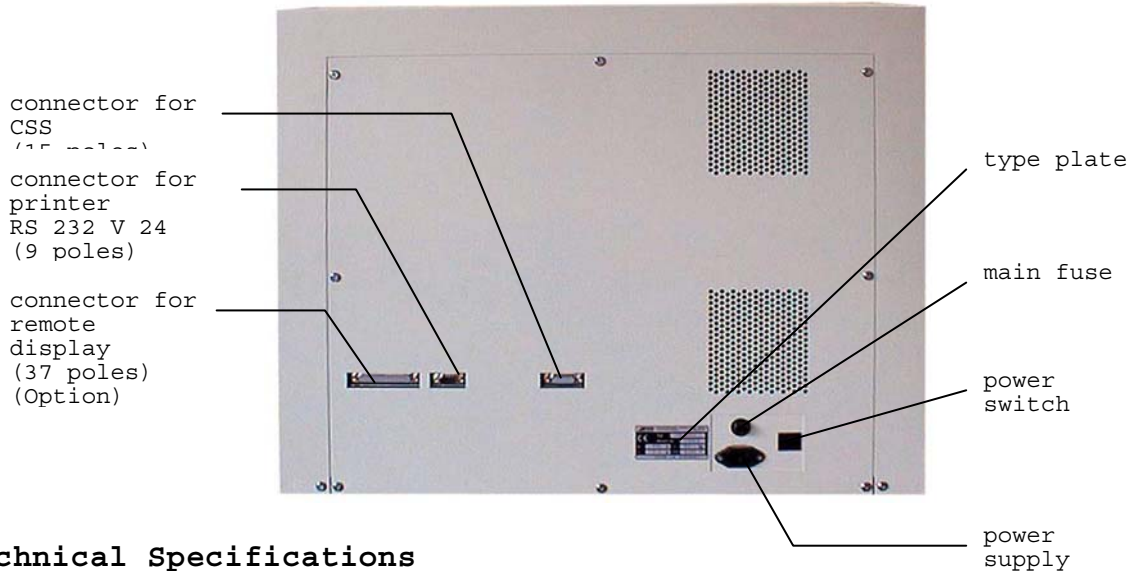
To your own safety keep hopper cover and coin rail cover closed while machine is running. This also minimizes the noise level.

Emissions

Emission values (sound pressure level) at the place of work are according to ISO 7779:

Stander	(0.25 m distance - 1.5 m height):	73 dB (A)
Bystander	(1 m distance - 1.5 m height):	72 dB (A)

Description

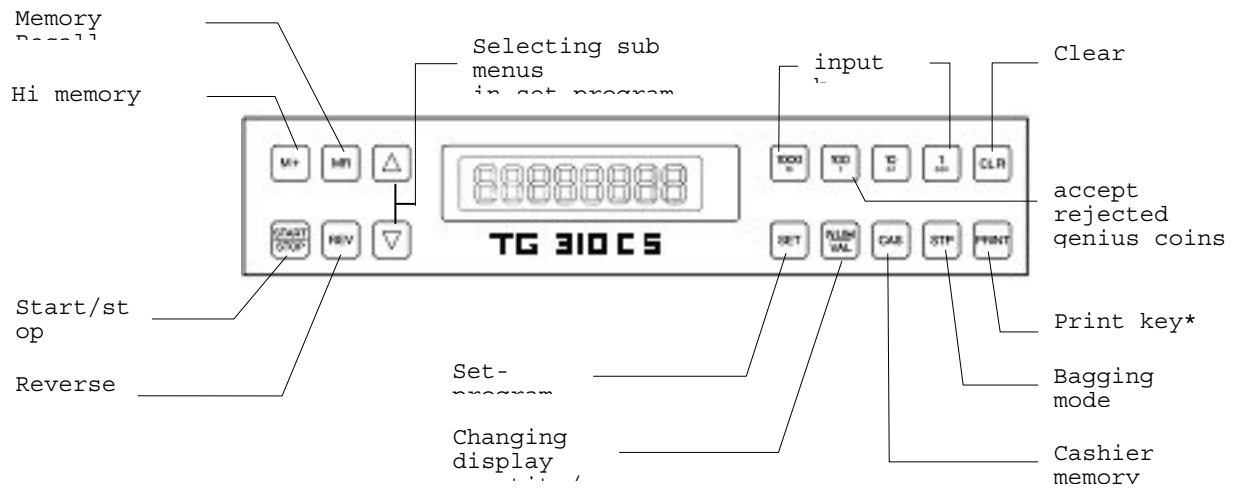


Technical Specifications

Dimensions:	Height	550 mm	450 mm*
	Width	660 mm	
	Depth	300 mm	
Weight:		approx. 35 kg	
Power supply:		230 V 50 Hz or 115 V 60 Hz	
Power consumption		110 W	
Ambient temperature:		10 - 40 °C	
Humidity:		30 - 75 %	
Counting speed:		up to 600 coins per minute	
Volume coin hopper:		approx. 1000 coins (mixture)	
Volume intermediate drawer:		approx. 330 coins (diameter 21,5 mm)	
Volume collecting drawer		approx. 1000 coins (diameter 21,5 mm)	

* TG 310CS without intermediate drawers

Display and Keyboard



* Only in function when a printer is installed.

Introduction

With the TG 310CS you can count, sort and settle mixed coins in a single operation. Foreign and false coins, if identifiable, will be rejected automatically. Different memory levels allow calling up single and total sums as well as single numbers of units and amounts of the respective denominations.

Furthermore preset stops can be programmed for every coin denomination, e.g. the amount for bags used in banks or the amount for rolls to fill the paper tubes. A wide range of accessories and different connecting possibilities allow optimal adaptation to different field applications.

Installation

Usually the installation and instruction is done by a field technician. If you want to install the machine by yourself you should take care of a solid table where the machine stands horizontally, otherwise it may not function properly. Connect the machine to the mains by using the attached power cord. Pay attention to the correct power supply, you will find hints on the type label at the rear side of the machine. Additional equipment or a systems connection has to be plugged into the appropriate socket at the rear side of the machine.

Counting - Sorting - Settling

Switch on main power

busy 9...0

0.00

The main power switch is at the rear side of the machine. You can constantly leave the machine in 'on'-position as it switches automatically into the stand-by mode when it is not used. After turning on the machine it carries out a calibration and is ready for operation after a few seconds.

Delete Memory?

2 x and

It is recommended to delete the memory always when coins are taken out of the machine. For this press two times and then . If stops are activated you must determine whether also the stop counters shall be deleted with the deletion of the memory. The selection is made with . **'H only'** means that only the main memory will be deleted. **'H and S'** means that main memory and stop counters are deleted.

! This indication only appears when stops are activated.

Fill coins into hopper

Do not fill the coins directly into the hopper: Use the attached sorting sieve to remove dirt and foreign substances.

! The maximum filling height of the hopper is at the middle of the coin disk.


Close hopper lid

Coins are counted and sorted. The TG 310CS stops automatically when the counting process is finished.

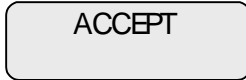
Foreign coins?




F 123.45

If foreign coins are identified during the counting operation you will find them in the rejection drawer.

- ! Note that these coins are not counted. Look at these coins and if there are real coins among them put them into the hopper again and press  .

Acceptance



It is quite usual that sometimes also good coins are rejected. If certain coins are not accepted in the second try, stop the machine, press  and then  . With this you reduce the sensitivity of the coin detection for one counting process. Now you can also count those coins that were rejected before. After pressing  the original sensitivity is readjusted.

Memory transfer

Memory Contents - Single Values - Number of Units

MR Δ ▽ NUM VAL

1 x MR E 123.45

Δ ▽ E 2.-

2 x MR H 1. 234.56

Δ ▽ H 2.-

MR H 2. 589.50

MR C 24 20.50

MR H 1. 3420.20

MR C 24 0.00

PRINT

With **MR** you select the required memory level and with **Δ** **▽** you step through the individual denominations.

With **NUM VAL** you determine whether the number of units or the amount shall be displayed.

Amount of **'last'** counting before adding to the memory. The **'E'** stands for batch total (first memory).

Single values of **'last'** counting. (*)

Total sum of grand total (main memory) of actual run.

Denomination in grand total memory. (*)

By pressing **MR** another time grand totals of further activated runs are displayed.

Display grand total of actual run (in this case run 2).

Display of cashier memory of actual run (if activated). The selection of respective cashier memory is made with the keys **Δ** **▽** or **10** **1**, e.g. **C 25 0.00**. (*)

Display grand total of the next activated run (in this case only two runs are activated, i.e. the next active run is run 1).

Display of correspondent cashier memory, in this case there was no deposit for cashier 24 in run 1.

By pressing **Print** all cashier memories will be printed, provided that the amount is not zero.

MR

S 5.70

Display of actual amount in stop counter memory of active run. (*)

Δ

∇


S 2. 0.00

Stop memory denomination.

S 2. 0

Display of actual amounts in the stop memory, for example for the second coin denomination. The display changes between amount and number of units.

PRINT

Press  if you want to have a detailed print.

STOP VALUES		
RUN 1		
Date	31.05.2001	
Time:	10:03	
Denomination:	Quantity	
Amount		

2.00	1 (25)	2.00
0.50	1 (40)	0.50
1.00	1 (40)	1.00
0.20	1 (40)	0.20
0.05	1 (50)	0.05
0.10	1 (40)	0.10
0.02	1 (50)	0.02
0.01	1 (50)	0.01

pre-adjustment of coin program

MR

H 0. 4009.70

If run 0 is activated also the contents of this run are displayed. Contents of memories in run 0 are the sums of the individual runs.

MR

C 24 20.50

Contents of cashier memories in run 0 (if activated) are the sums of the cashier memories activated in the individual runs. (*)

(*) After some seconds the display changes automatically to the 'normal display'.

Setup-Program

SET

Δ

15.43 h

Δ

dAY 26

Δ

Month 05

Δ

Year 2001

Δ

Print on

SET

Pr.tYP 0

1

Pr.tYP 1

1

Pr.tYP 2

SET

Print on

MR

Lang EnG

Δ

Lang FrE

With the setup program you adjust the machine according to your requirements. You open the setup-program with SET .

With Start/Stop you can switch back to the normal display at any time. With Δ ∇ you make the desired selection. Some of the parameters must be adjusted to 'on' or 'off':

CLR = off 1 = on

Adjustment of time and date is done with 1000 100 10 1 and is only interesting when a printer is installed.

If a printer is installed this parameter must be adjusted to 'on'.

Citizen needle printer
IDP 560, IDP 562, IDP 460
without paper cutter

Epson needle printer
Epson TM 300 with automatic
paper cutter

Star thermal printer
TSP 600 series with automatic
paper cutter

With MR you can display a selection of the available printer languages.

With Δ you adjust the desired language, e.g. LAnGEnG for English or LAnG FrE for French.

Δ	Lang SPA
Δ	Lang GER
MR	Print on
Δ	CAS of
Δ	StoP of
Δ	bEEP on
Δ	Sto on
Δ	F.1 U 0000
	until
SET	F.9 U 0000
Δ	S 1 0000
	until
SET	S 9 0000
Δ	Add on
Δ	SAM on
Δ	bPS 9600

More details see chapter '**Cashier memory**'.

More details see chapter '**Stop counting**'.

Beep '**on/off**' when counting foreign coins.

Machines **with intermediate drawers**:
Adjust to '**on**'.
Machines *without intermediate drawers*: Adjust to '**off**'.

Setting of filling quantity of drawers. See chapter '**Overflow control of drawers**'.

Preset stop counting. Each drawer respectively coin denomination is programmed with a value. Adjustment is only necessary when you are working with stops. Adjustment with 1000 100 10 1. See chapter '**Working with Stops**'.

See following chapter '**Stop counting**' under item '**Working with stops**'.

This indication only appears on machines with intermediate drawers (see '**Sto on**'). If '**SAM**' is set to '**on**' the display ('**U**' changes to '**u**') reminds the operator of the manual opening and closing of the slide when pressing M+.

Adjustment of baud-rate with keys 1 and CLR (38400, 19200,

9600, 4800, 2400, 1200, 600,
300).

SET 8 bit n

Adjustment of data transfer parameters with **1** and **CLR** .

1 8 bit E

1 8 bit o

1 7 bit E

1 7 bit o

SET StoP 1

Adjustment of data transfer parameters, 1-stop-bit or 2-stop-bit can be adjusted with **1** .

1 StoP 2

Δ Protoc 1

With the keys **1** and **CLR** you can select from three interface protocols already programmed, see also the service manual.

! Before selecting a protocol you have to pre-adjust some necessary transfer parameters.

! If a serial printer is adjusted by DIP-switch 'SW 4 = on' the display of the possible interface protocols will be suppressed and is infeasible.

Interface protocol for connection to:

Protoc 1

- CSS 8600

Protoc 2

- CSS 8500

Protoc 3

reserved for special requirements

Δ

CSS-CLr0

This function works only on machines that are connected to the money processing system CSS 8600. Here you can determine whether also the data of the stop counters shall be deleted when deleting the first memory from the host system CSS 8600.

1

CSS-CLr0

Stop counters are not deleted.

1

CSS-CLr1

Stop counters are deleted.

Stop Counting

Preset of Stops

free	S 1. -----
2.00	S 2. 0025
0.50	S 3. 0040
0.02	S 4. 0025
0.10	S 5. 0040
1.00	S 6. 0050
0.20	S 7. 0040
0.01	S 8. 0050
0.05	S 9. 0050

Activate Stops

STP	StoP on
-----	---------

With the TG 310CS it is possible to program a stop value for each denomination. Stops are necessary in connection with a bagging device, a base cabinet with large collecting drawers or a tubing mechanism (see 'Accessories'). The stop values are adjusted in the setup-program.

On the left side you see an example for the adjustment of Sterling Plastic Bag Values

After programming the stop values, they remain valid until you adjust other values.

But you can activate or deactivate the stop values as you like.

By pressing / you switch to 'on/off' alternatively.


Sta
rt

Back to normal counting mode
after stop selection on/off.

Working with Stops

S 5 40

Add of

As soon as the preset stop value is reached, the machine stops. The display shows which denomination reached the stop. Empty the respective drawer or the bag and press  to continue.

Adjust in the setup-program how the memory shall be used. With the adjustment 'add on' each counted sum is accumulated. With the adjustment 'add of' the respective amount will be deducted from the memory when reaching the stop value. So with this adjustment the memory contents are always identical with the amount of money still being in the machine.

- ! When the preset mode is activated conflicts can arise with the overflow control. Therefore we recommend to use the overflow control only for the intermediate drawers. Further information see chapter '**Overflow control of Drawers**'.
- ! When reaching a stop the coins which are already on the sorting rail are rejected as foreign coins. For this reason it is usual that coins are frequently rejected into the rejection drawer when working with preset stops.

Overflow Control of Drawers

The TG 310CS is equipped with nine collecting drawers and depending on the model additionally with nine intermediate drawers. Instead of collecting drawers the machine can be equipped with a bagging device and nine bag holders or with a base cabinet with nine large collecting drawers. Depending on the coin denomination, i.e. size of coins, the drawers hold a certain number of coins. These denominations are programmed already by the factory, but they can be changed in the setup-program if necessary.

Values for Overflow Control for Euro coins

The adjustment is made in the setup-program, the change between collecting and intermediate drawers is done with **M+** and changing from one to the next drawer with **SET**.

! Selection between intermediate and collecting drawer is only possible if the parameter **So on** in the setup-program is set to on.

free	F1 u 60
2.00	F2 u 60
0.50	F3 u 80
1.00	F4 u 80
0.20	F5 u 100
0.05	F6 u 170
0.10	F7 u 170
0.02	F8 u 250

The small 'u' indicates that the value is valid for the intermediate drawers.

Intermediate drawers must always be marked with 'F-values'.

The 'F' indicates the number of the drawers starting counting with the first drawer from the left hand side.

0.01

F9 u 250

free

F1U 180

The big 'U' indicates that the value is valid for the standard collecting drawers.

! Do not adjust any values here for machines equipped with bagging device, i.e. set '0000'.

2.00

F2U 180

The values for the collecting drawers are the values of the intermediate drawers multiplied with factor 3.

free

F1U 1500

Recommended values for large collecting drawers for machines equipped with base cabinet.

! In case you work with stops normally used in banks, adjust all values to '0000'.

2.00

F2U 1500

The values for the large collecting drawers inside the base cabinet are the values of the intermediate drawers multiplied with factor 25.

0.50
etc.

F3U 2000

Cashier Memory

By pressing you can activate or deactivate the function of the cashier memories alternatively. These 99 memories can be related to different persons. Counting results which are transferred with , additionally have to be related to a cashier, that means the memories C1 to C99. The selection is done by or .

At the end of a settlement process you can see which amounts accumulated in the different cashier memories by pressing and .

Accessories

External Printer

The printer can be installed later, please call your service.

M+

```

Date:          31.05.2001
Time:          10:03
Amount :      3,88
= = = = =
= = = = =
    
```

In the setup-program must be adjusted. The adjustment can only be made when a serial printer is connected and when the corresponding DIP-switch was correctly configured. After each memory transfer with the last counting result is printed. Normally the total amount is sufficient.

MR

But you can also have a detailed printout of the 'last' deposit (batch total). For this please press until an 'E' appears before the amount and then press .

```


GRAND TOTAL          RUN 1
Date:                31.05.2001
Time:                10:03
Cashier 1            100.10
Cashier 2            200.20

Denomination:       Quantity
Amount
- - - - -
-
2.00      0001      2.00
0.50      0001      0.50
1.00      0001      1.00
0.20      0001      0.20
0.05      0001      0.05
0.10      0001      0.10
0.02      0001      0.02
0.01      0001      0.01
- - - - -
-
    
```

The contents of the grand total (2 x and) are always printed in detail.

The contents of the cashier memories (if activated) are only printed in case that the amount is not zero.

Troubleshooting and Error Elimination

Error Indication	Error Explanation	Error Elimination
CAL	No error	While processing larger amounts of money the TG 310CS stops occasionally and carries out a calibration of the coin detection system. This process occurs automatically, there is nothing to do for the operator.
2		Coin jam on sorting rail or between sorting rail and coin hopper. Remove the coins in these areas and press  .
6	Main power voltage too low.	Connect the TG 310CS to another plug socket. If the error cannot be eliminated, call the service.
7	Printer error	A printer is logged on in the setup-program. If a printer is connected, it must be in stand-by mode, that means it is connected to the mains, it is online and enough paper is present. If there is no printer connected, you must log off the printer in the setup-program to avoid this error message.
8	Error of Coin Detection System	To eliminate this error switch the TG 310CS off for three seconds and then restart. If this error occurs frequently, please call the service.
E	Memory error in calibrating mode.	This is an internal machine error, please call the service.

Cleaning, Maintenance and Service



Warning

Disconnect power supply before cleaning the machine or carrying out maintenance work.



coin hopper
with

sorting

The proper function of the machine can only be assured when the coin rail is always cleaned. For cleaning please turn the sorting chute forwards and use the attached brush. Clean the sorting rail especially in the area of the sensor, the driving wheel, the coin disk and the coin hopper.



Warning

Further maintenance and repair work must be carried out by a service technician.

To ensure a good and long-term performance of the TG 310CS we recommend the conclusion of a maintenance contract with one of our authorized service agencies.