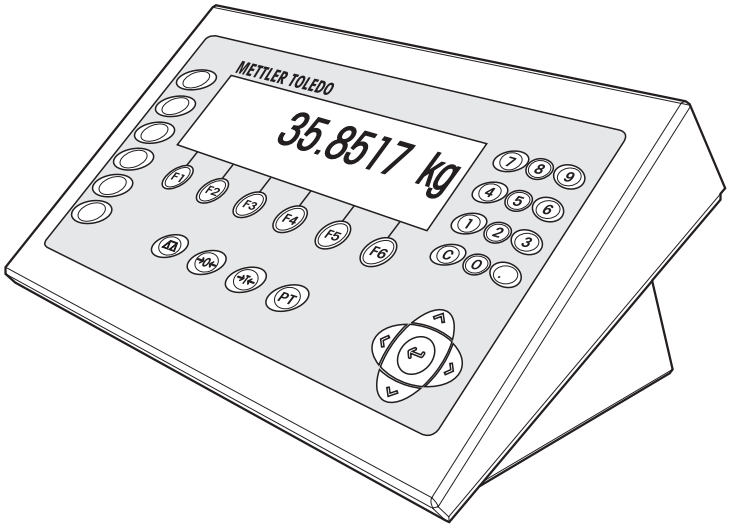
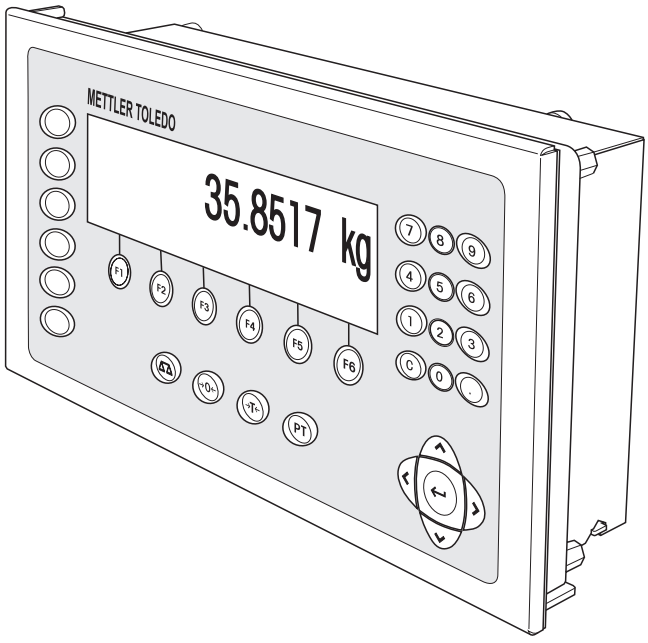
Operating instructions

METTLER TOLEDO MultiRange IND690-Sys weighing terminals





www.mt.com/support

ServiceXXL
Tailored Services

Congratulations on choosing the quality and precision of METTLER TOLEDO. Proper use according to these instructions and regular calibration and maintenance by our factory-trained service team ensure dependable and accurate operation, protecting your investment. Contact us about a ServiceXXL agreement tailored to your needs and budget.

We invite you to register your product at www.mt.com/productregistration so we can contact you about enhancements, updates and important notifications concerning your product.

Contents

1 Safety instructions

1.1 Safety instructions for IND690xx-Sys

The explosion-protected IND690xx-Sys weighing terminal fulfils Device category 3 and is approved for operation in Zone 2 (gases) and Zone 22 (dusts) hazardous areas.
There is an increased risk of injury and damage when the IND690xx-Sys weighing terminal is used in a potentially explosive atmosphere.
Special care must be taken when working in such hazardous areas. The code of practice is oriented to the "Safe Distribution" concept drawn up by METTLER TOLEDO.

Competence

- ▲ The weighing terminal, accompanying weighing platforms and accessories may only be installed, maintained and repaired by authorised METTLER TOLEDO service personnel.
- ▲ The mains connection may only be connected or disconnected by the owner's electrician.

Ex approval

- ▲ For the exact specification please refer to the statement of conformity.
- ▲ No modifications may be made to the terminal and no repair work may be performed on the modules. Any weighing platform or system modules that are used must comply with the specifications contained in the installation instructions. Non-compliant equipment jeopardizes the safety of the system, cancels the Ex approval and renders any warranty or product liability claims null and void.
- ▲ The cable glands must be tightened so that a strain relief of ≥ 20 N per mm cable diameter is ensured.
- ▲ When connecting external devices, always observe the maximum permissible connected loads, see installation information. It must be ensured that no voltages are fed into the IND690xx-Sys than it itself provides. The interface parameters have to fulfil the standard.
- ▲ Peripheral devices without an Ex approval may only be operating in non-hazardous areas. It must be ensured that no voltages are fed into the IND690xx than it itself provides. In addition the maximum permissible connected loads have to be observed, see installation information. The interface parameters have to fulfil the standard.
- ▲ The safety of a weighing system including the IND690xx-Sys weighing terminal is only guaranteed when the weighing system is operated, installed and maintained in accordance with the respective instructions.
- ▲ Also comply with the following:
  - the instructions for the system modules
  - the regulations and standards in the respective country
  - the statutory requirement for electrical equipment installed in hazardous areas in the respective country
  - all instructions related to safety issued by the owner
- ▲ Before initial start-up and following service work, check the explosion-protected weighing system for the proper condition of all safety-related parts.

Operation

▲ Prevent the build-up of static electricity. Therefore:
- always wear suitable working clothes when operating or performing service work on the system,
- do not rub or wipe off the keyboard surface with a dry cloth or glove.

▲ Do not use protective hoods.

▲ Prevent damage to the weighing terminal. Hairline cracks in the keyboard membrane are also considered damage.

▲ If the IND690xx-Sys weighing terminal, accompanying weighing platforms or accessories are damaged:
- Switch off weighing terminal.
- Separate the weighing terminal from the mains in accordance with the applicable regulations.
- Secure the weighing terminal against accidental start-up.

Leakages

▲ The IND690xx-Sys panel unit does not comply with any freedom-from-leaks rating. Therefore the installer is responsible for compliance with the freedom from leaks rating, e.g. at control cabinet installation. The respective national standards furthermore have to be observed. At least a freedom-from-leaks rating IP54 is required in hazardous areas.

1.2 Safety instructions for IND690-Sys

▲ Do not operate the IND690-Sys weighing terminal in hazardous areas. We have special suitable scales in our range of products for hazardous areas.

▲ Ensure that the power socket outlet for the IND690-Sys weighing terminal is earthed and easily accessible, so that it can be de-energised rapidly in emergencies.

▲ Ensure that the supply voltage at the installation site lies within in the range of 100 V to 240 V.

▲ The safety of the device cannot be ensured if it is not operated in accordance with these operating instructions.

▲ Only authorised personnel may open the IND690-Sys weighing terminal.

Competence

▲ The IND690-Sys weighing terminal, accompanying weighing platforms and accessories may only be installed, maintained and repaired by authorised METTLER TOLEDO service personnel.

Leakages

▲ The IND690-Sys panel unit does not comply with any freedom-from-leaks rating. Therefore the installer is responsible for compliance with the freedom from leaks rating, e.g. at control cabinet installation. The respective national standards furthermore have to be observed.

2 Introduction and commissioning

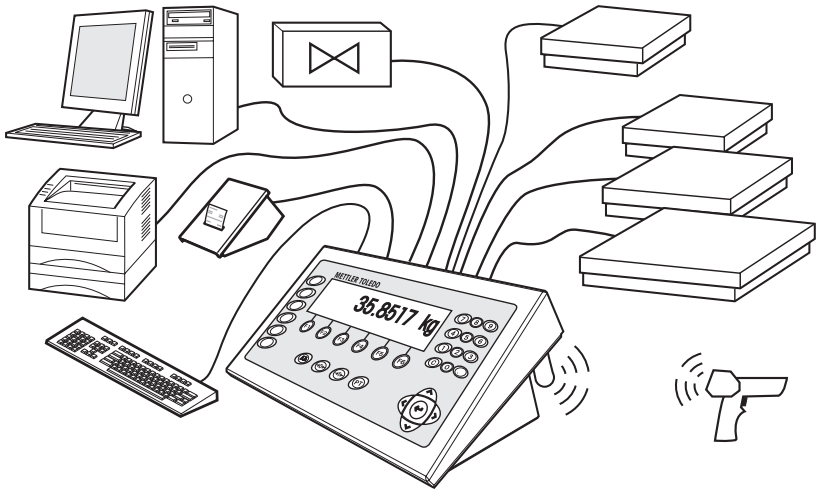
2.1 Documentation

These operating instructions describe the operation of the IND690(xx)-Sys with the basic functions of the Sys-690 application software and all the possible interfaces. Information on your customer-specific Sys-690 application can be found in the corresponding operating instructions specially authored for you.

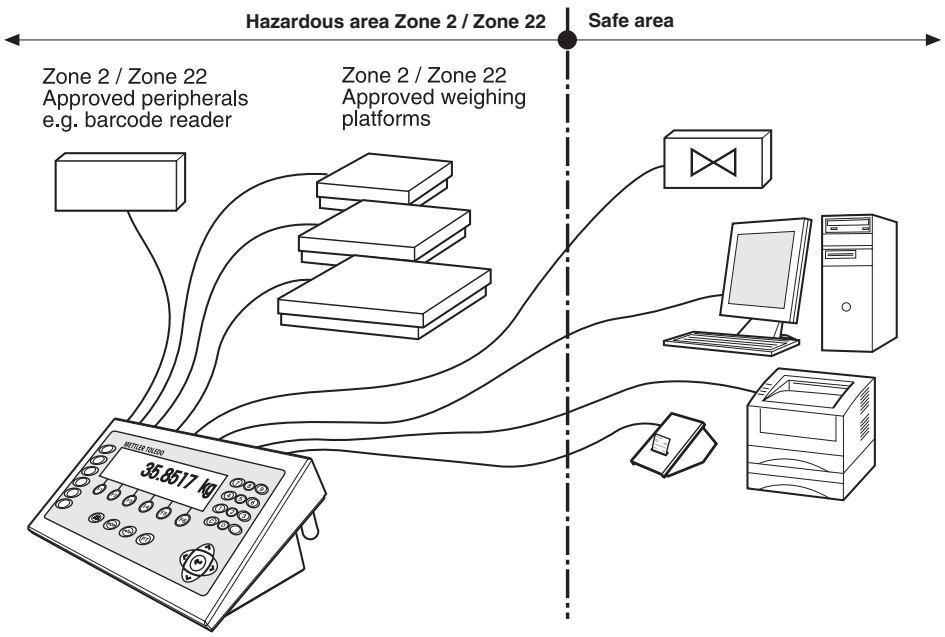
2.2 Applications

With the IND690(xx)-Sys weighing terminals the following applications are possible:

IND690-Sys



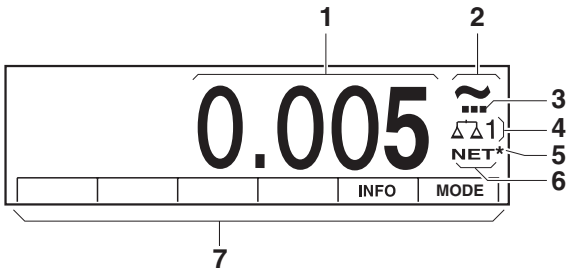
IND690xx-Sys



- Multi-scale operation with up to 4 weighing platforms with IND690-Sys or up to 3 weighing platforms with IND690xx.-Sys, including weighing platforms with an analog signal output.
- Up to 9 data interfaces
  - for printing,
  - for data exchange with a computer,
  - for connecting a barcode reader,
  - for control, e.g. of valves or flaps,
  - for connecting reference scales,
  - for connecting an external keypad,
  - for wireless data exchange via bluetooth or WLAN

2.3 IND690(xx)-Sys weighing terminal

2.3.1 Display



1 Weight display BIG WEIGHT® with sign and decimal point

2 Stability monitor: lights up until the weighing platform has levelled out, then the weight unit appears here

3 Range display for multi-range weighing platforms

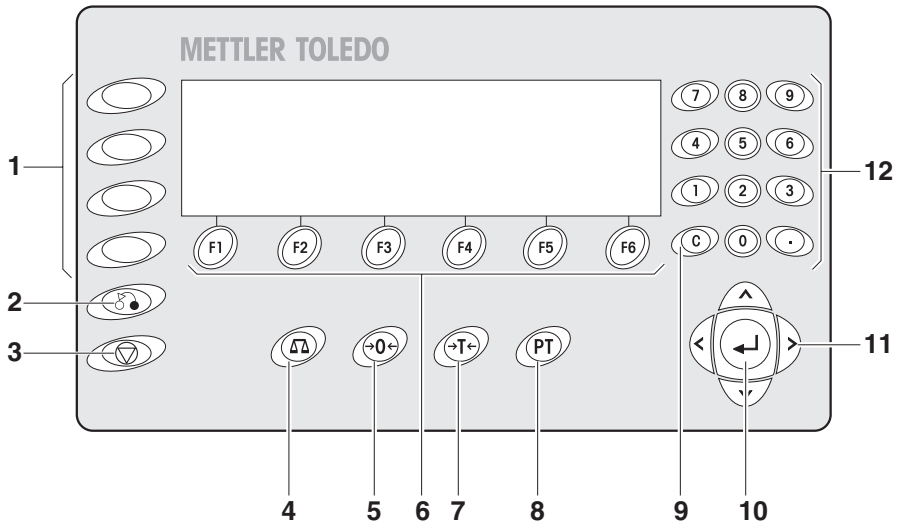
4 Number of the weighing platform: shows the weighting platform just selected

5 Symbol * for identifying weight values in the second unit or in a higher resolution

6 NET symbol for marking net weight values

7 Assignment of the function keys

2.3.2 Keypad



1 CODE A … CODE F keys – enter identification data

2 BACK key – return to the previous input mask

3 CANCEL key – cancel input

4 SCALE key – select scale

5 ZERO-SET key – set scale to zero, test scale

6 Function keys F1 … F6 – the current assignment is shown in the display above the key

7 TARA key – tare scale

8 TARE SPECIFICATION key – enter known tare values numerically

9 CLEAR key – clear entries and values

10 ENTER key – accept and transfer data

11 Cursor keys

12 Numeric keypad with decimal point

2.4 Cleaning

DANGER OF SHOCK

➜ Do not open the IND690(xx)-Sys weighing terminal to clean.

CAUTION

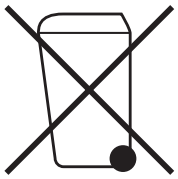
➜ Make sure that unused connection sockets are covered with protective caps to protect the socket contacts from moisture and dirt.

➜ Do not use high-pressure cleaners.

Cleaning

➜ Wipe off the IND690(xx)-Sys weighing terminal with a commercially available glass or plastic cleaner.

2.5 Disposal



In conformance with the European Directive 2002/96 EC on Waste Electrical and Electronic Equipment (WEEE) this device may not be disposed of with domestic waste. This also applies to countries outside the EU, per their specific requirements.

➜ Please dispose of this product in accordance with local regulations at the collecting point specified for electrical and electronic equipment.

If you have any questions, please contact the responsible authority or the distributor from which you purchased this device.
Should this device be passed on to other parties (for private or professional use), the content of this regulation must also be related.
Thank you for your contribution to environmental protection.

3 Basic functions

3.1 Switching on and off

This function is only available when ordered expressly.

Switch on from the standby mode

➜ Press any key.
The display shows a weight value based on the last tare value and zero point.

Switch off

➜ Press function key OFF.
The display goes out and the IND690-Sys weighing terminal is in the standby mode. The zero point and tare value remain saved.

Note
If the function key OFF does not appear in the current assignment, press the cursor key < or > several times if necessary until OFF is displayed.

Switch on with restart

1. Relieve weighing platform.
2. Press function key OFF and hold down until METTLER TOLEDO IND690-Sys appears in display.
   Then the weight value appears.

The weighing platform is restarted.

3.2 Setting to zero

Setting to zero corrects the influence of minor dirt on the load plate.
In the case of excessive dirt which cannot be compensated by setting to zero, the display shows OUT OF RANGE.

Manual zero set

1. Relieve weighing platform.
2. Press →0←.
   The display shows 0.000 kg.

Automatic zero set

On certified weighing platforms the zero point of the weighing platform is automatically corrected when the weighing platform is relieved.
The automatic zero set can be switched off in the master mode on noncertified weighing platforms.

3.3 Taring

3.3.1 Manual taring

1. Place empty container on scale.
2. Press (→T←).
   The tare weight is saved and the weight display set to zero.
   The display shows the NET symbol.

Notes

- When the weighing platform is relieved, the saved tare weight is displayed with a negative sign.
- The weighing platform only saves **one** tare value.

3.3.2 Specify tare weight

This function is only available when ordered expressly.

Enter numerically

1. Press (PT).
2. Enter tare weight (container weight) and confirm with ↵.
   When weighing platform is relieved, the entered tare weight is displayed with a negative sign.

Note

The weight unit for entering the tare weight can be selected with the cursor keys < or >.

Correct entry

➜ Clear the entry character by character with (C) and repeat correctly.

3.3.3 Recall currently saved tare weight

The saved tare weight can be recalled at any time.

➜ Enter INFO, (PT) sequence.
The saved tare weight is displayed.

3.3.4 Clear tare weight

➜ Relieve weighing platform and tare.

➜ Press (C).

3.4 Weighing

Weighing without taring

➜ Lay weighing sample on weighing platform.
Gross weight (total weight) is displayed.

Weighing with taring

1. Place the empty container on the weighing platform and tare.
2. Pour in weighing sample.
The display shows the net weight and the NET symbol.

Weighing with tare specification

1. Place filled container on weighing platform.
The display shows the gross weight (total weight).
2. Specify tare weight or recall tare memory.
The display shows the net weight (container content) and the NET symbol.

3.5 Working with several weighing platforms

Up to 4 weighing platforms can be connected to the IND690-Sys, and up to 3 weighing platforms can be connected to the IND690xx-Sys.
Depending on the setting in master mode, only the currently active scale appears in the display (serial Multi-scale mode) or all scales are operated at the same time (parallel multi-scale mode). A constantly updated sum scale is also available in parallel multi-scale mode.

3.5.1 Switch over weighing platform

The weighing platform currently selected is shown on the terminal.

➜ Press (⚖).
The next weighing platform is selected.

– or –

➜ Enter number of weighing platform and press (⚖).
The desired weighing platform is selected.

Note

The sum scale can only be operated non-verifiably. It is therefore identified by the symbol Σ.

3.6 Displaying versions

When connected to a power supply and when restarted (see Section 3.1), the versions of the IND690-Sys and the installed components are displayed.

Version code for the IND690-Sys with customer-specific application program

METTLER-TOLEDO IND690-Sys
IND690 0.13
CC-AA-XXXXXXXX-WV-DD.MM.YYYY

CC	Country code, e.g. DE = Germany
AA	Software type, e.g. 00 = Base
XXXXXXXXX	Order No.
VVV	Software version
DD.MM.YYYY	Date of manufacture, day.month.year

4 Additional functions

The assignment of the 6 function keys of the IND690-Sys weighing terminal differs depending on the weighing task. The current assignment is shown above the function keys. The cursor keys < or > can then be used to switch to other function key assignments.
Independent of the customer specific application software, the IND690-Sys has the following additional functions:

			OFF	**INFO**	**MODE**
			Switch off IND690-Sys	Display information, see 4.2	Activate master mode, see Chapter 5

4.1 Display ID code and test weighing platform

Each time the weighing platform configuration is changed the ID code counter is increased by 1. On certified weighing platforms the displayed ID code must match the ID code on the ID code sticker, otherwise the calibration is no longer valid.

Display ID code

➜ Press →0← and hold until IDENTCODE = ... appears in the display.

Test weighing platform

➜ Press →0← again.
The connected weighing platform is checked. The display shows CHECK SCALE and then SCALE IS OK after completing the test.

Note
If weighing platform is defective, display shows SCALE ERROR.

4.2 Recall information

On the weighing terminal memory contents and system information can be recalled.

1. Press INFO key.
   Then the following function key assignment appears:

DATE	TARE	SCALE	ALIBI	END	VERS
Display date and time	Display tare weight	Call up the data of the current scale: Version, max. load, ID code, etc.	Recall content of alibi memory, see section 4.4. This selection only appears when Alibi-Memory-690 is installed.	Exit information mask	Display version numbers of installed software modules

W&M	ERROR	COM			
Display checksum of the software relevant to calibration. The correct checksum is documented in the calibration approval.	Fault / Event memory display	Calling up the settings of the interfaces			

2. Select desired information.
   The information is displayed for about 5 seconds, then the weighing terminal changes to the weighing mode again.

Note

When several values are displayed, the IND690-Sys automatically changes to the next value after approx. 5 seconds.

4.3 Working with external keypad

If the weighing terminal is equipped with the interface PS2-690, an external keyboard can be connected so that alphanumerical values can be entered conveniently.
In addition to the alpha and numerical keys, the following additional scale functions can also be operated with the external AK-MFII keypad.

Function for IND690-Sys	External keypad	Function for IND690-Sys	External keypad
Function key F1	F1	CODE A key	Shift F1
Function key F2	F2	CODE B key	Shift F2
Function key F3	F3	CODE C key	Shift F3
Function key F4	F4	CODE D key	Shift F4
Function key F5	F5	CODE E key	Shift F5
Function key F6	F6	CODE F key	Shift F6
⚖ key	F9	⚖ key	Shift F9
→0← key	F10	→0← key	Shift F10
→T← key	F11	→T← key	Shift F11
PT key	F12	PT key	Shift F12

Note
The language of your external keyboard can be set in the master mode block LAYOUT EXT. KEYBOARD, see page 22.

4.4 Recall data from Alibi memory

With the AlibiMemory-690 memory module you can fulfill your recording obligations in certified operation without having to archive paper.
AlibiMemory-690 automatically assigns every weighing operation a consecutive data record number that also appears on the printout, saves the net and tare value and also the date and the time.
The AlibiMemory-690 operates according to the principle of a ring memory: When the capacity limit of 675500 data records is reached, the oldest data record is deleted and overwritten with data from the latest weighing.
By entering suitable search criteria you can quickly access the data of a very specific weighing.

4.4.1 Initiate

➜ Press INFO, ALIBI key sequence.
The function keys change to the following assignment:

FIND	>>...	<	>	-> Num	END
Enter search criteria	Search for next matching data record starting with oldest	Show the data record of the weighing carried out directly beforehand	Show the data record of the weighing carried out directly afterwards	Search for data record with known data record number	Exit Info Alibi and return to normal mode

4.4.2 Fast search with entry of data record number

1. Press ->Num key.
2. Enter number of data record to be searched for and confirm with ↵.
   AlibiMemory-690 now searches for the desired data record.

Notes

- The search may take up to 10 seconds.
- If no data record with the entered number is found, the message NO MATCHING DATA RECORD appears.

4.4.3 Search with other search criteria

➜ Press FIND key.
The function keys are given the following assignment:

DATE	TIME	NET	TARE	START	END
Enter date as search criterion	Enter time as search criterion	Enter net value as search criterion	Enter tare value as search criterion	Start search with entered search criteria	Terminate search

All offered search criteria can be combined with each other.
The entered search criteria are shown in the display in clear text.
This enables you to search for a find a specific weighing.

Enter date

➜ Press DATE key and enter complete date in DD.MM.YY form.

Enter time

➜ Press TIME key and enter desired time in one of following formats.

Format HH all weighings between HH.00.00 and HH.59.59 are found
Format HH.MM all weighings between HH.MM.00 and HH.MM.59 are found
Format HH.MM.SS only the weighing at the time HH.MM.SS is found

Enter net/tare value

1. Press NET or TARE key.
2. Enter weight value and confirm with ↵.
   The function key assignment changes back again for selection of the search criteria.

Note

The weight unit for entering the weight values can be selected with the cursor keys < or >.

Start search

➔ Press START key.
AlibiMemory-690 searches for the oldest data record which meets the entered search criteria.

Notes

- The search may take up to 10 seconds.
- If no data record with the entered values is found, the message NO MATCHING DATE RECORD appears.
- If no search criterion has been entered, the oldest data record is displayed.

4.4.4 Displaying data records

Found data records are shown in the display.

DATE:	02.04.98	TIME	09.25.25
NUM:	000987		
NET:	25.000 KG		
TARE:	100.346 KG		

Scroll forward/back The keys >>..., < and > enable you to scroll within the found data records.

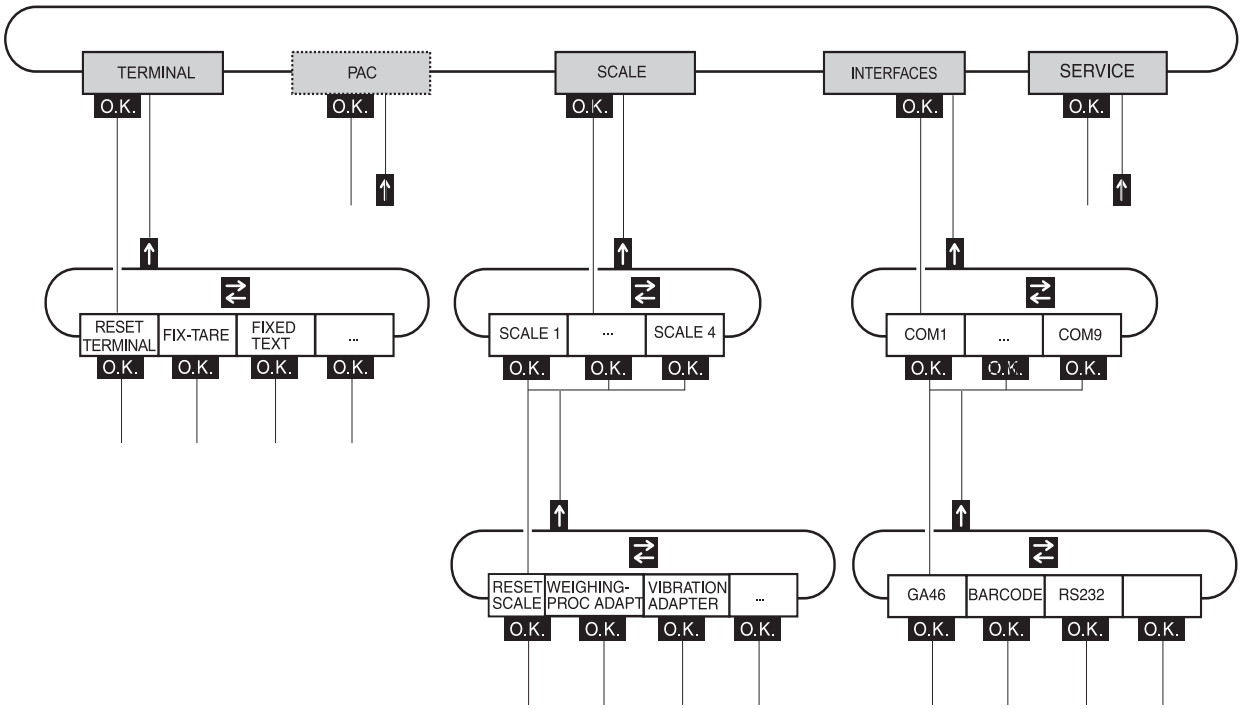
Note

When, during scrolling with the key >>... all entries of the AlibiMemory-690 have been searched through, the message END OF FILE appears.

5 Settings in the master mode

5.1 Overview of the master mode

In the master mode you adapt the IND690-Sys weighing terminal to meet your needs. Depending on the configuration, the master mode is divided into 4 or 5 master mode blocks, which are in turn divided into further blocks.



TERMINAL For system settings, such as entering the date and time or loading permanent texts, see section 5.3.

PAC To set application-specific parameters.

SCALE To select one of the connected weighing platforms. For each selected weighing platform the parameters are then set which concern the weight value, e.g. stability detector, unit, etc., see section 5.4.

INTERFACES To select an interface. The communication parameters are then set for each interface, see section 5.5.

SERVICE For configuring the weighing platform(s).
On IDNet weighing platforms only for METTLER TOLEDO service technicians.
On weighing platforms with an analog signal output, see service manual A/D converter Point ME-22004256.

5.2 Operating the master mode

5.2.1 Enter the master mode

1. Press MODE key.
   If the current function keys assignment does not contain MODE, press the cursor keys < or > as often as necessary until the MODE key appears.
2. Enter personal code if configured.
   The display shows the first master mode block TERMINAL.

5.2.2 Assignment of function keys in the master mode

Assignment on the top level
On the top level of the master mode the function keys are assigned as follows:

←	→		↑	**END**	**OK**
Change to previous block within a level	Change to next block within a level		Exit level and return to higher-level block	Exit the master mode and return to normal mode	Recall lower-level block or confirm selection

➜ Select the function by pressing the function key.

Example ➜ Press the END key to exit the master mode and return to the normal mode.

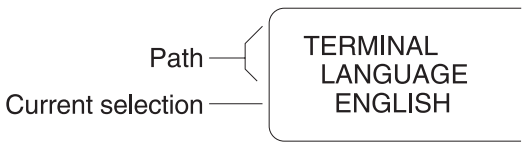
When the function keys are otherwise allocated

➜ Press the cursor keys < or > repeatedly until the function key assignment shown above appears.

5.2.3 Orientation in the master mode

For improved orientation the display shows the last steps in the path of the current master mode block.

Example The upper 3 lines of the display show the following path for selecting the language:



5.2.4 Entries in the master mode

The following basic rules apply to entries made in the master mode:

- Confirm (alpha)numeric entries with ↵.
- Alphanumeric entries with the IND690-Sys: see below.
- To accept the displayed value: Press ↵.

Enter alphanumeric identification

1. Press one of the keys CODE A … CODE F.
   The functions keys are given the following assignment:

ABCDE	FGHIJ	KLMNO	PQRST	UVWXY	Z/-()
Selection of letters A to E	Selection of letters F to J	Selection of letters K to O	Selection of letters P to T	Selection of letters U to Y	Selection of letter Z or a special character

2. Select desired group of letters, e.g. press KLMNO key.
3. Select desired letter.
   The display changes again to the above selection.
4. Repeat entry in steps 2 and 3 for additional characters.

Note
Letters and numbers can be combined as desired.

5.2.5 Emergency entrance into the master mode

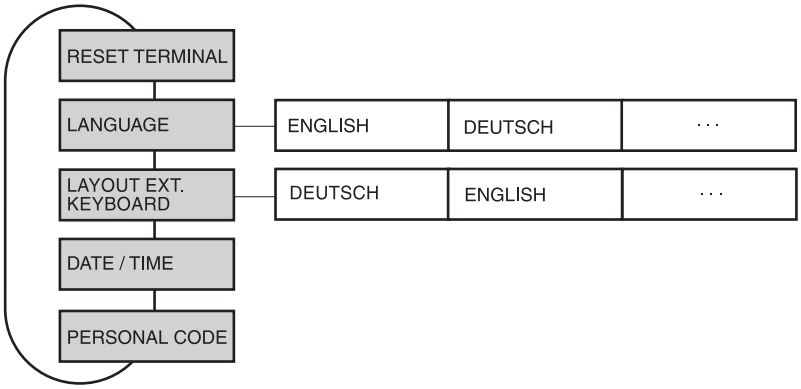
If a personal code has been assigned for entering the master mode and you have forgotten your code, you can still enter the master mode:

➜ Enter the character sequence C, L, E, A, R as your personal code.

5.3 TERMINAL master mode block

5.3.1 Overview of the TERMINAL master mode block

In the TERMINAL master mode block you enter the following system settings:



Legend Blocks highlighted in **grey** are described in detail in the following.

5.3.2 Settings in the TERMINAL master mode block

RESET TERMINAL	Reset all terminal functions to the factory setting
	• Resets the password MINIMUM to the factory setting: 2234 • LANGUAGE german • LAYOUT EXT. KEYBOARD Germany

LANGUAGE	Select dialog language
	Possible setting: English, Deutsch, Français, Nederlands, Italiano, Español, Polski, Russian, Slovakian, Portuguese, Hungarian, Slovenian, Czech, Croatian

LAYOUT EXT. KEYBOARD	Select keyboard layout of connected external keyboard
	Possible settings: German, French, Dutch, Italian, Spanish, Finnish, British, US-International

DATE / TIME	**Enter date and time**
	• Enter DATE in European notation: Day.Month.Year. • Enter TIME in European notation: (24) Hours.Minutes.Seconds.
Comments	• Enter single-place numbers with a preceding zero. • The clock continues to run after the terminal is switched off.

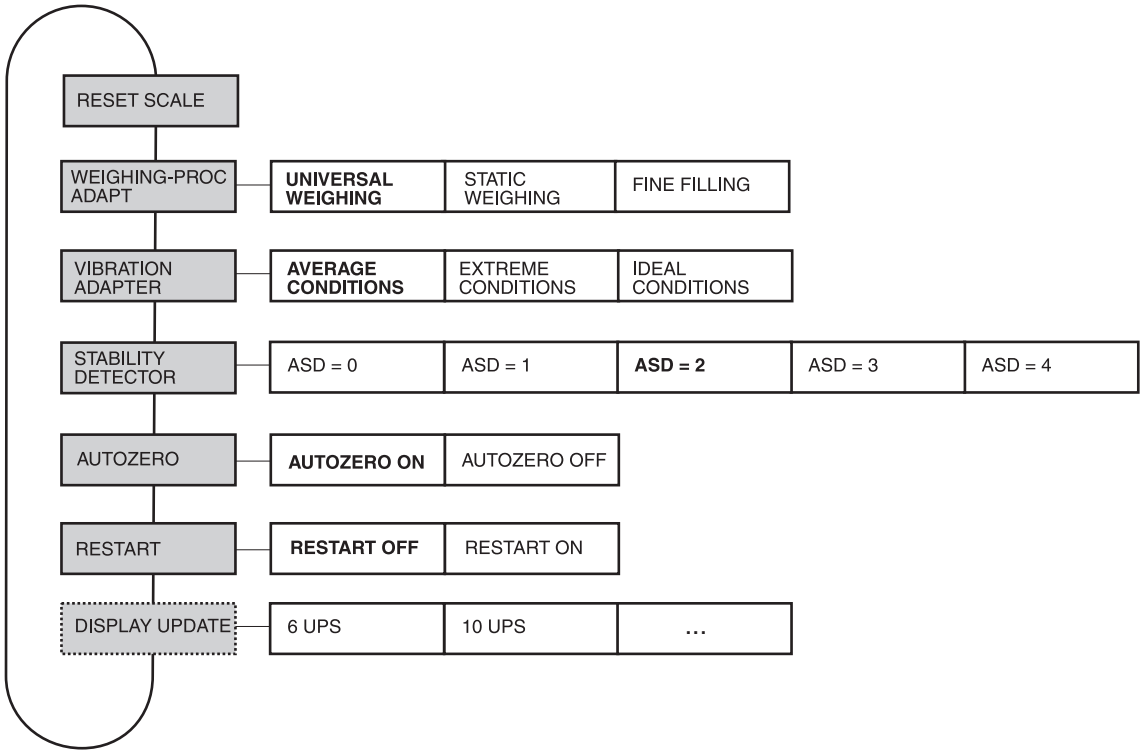
PERSONAL CODE	**Codes for entering various master mode menus**
	Enter codes with a maximum of 8 alphanumeric characters.
MINIMUM	Access to master mode
GENERAL	Access to all personal codes
PAC	Access to the PAC / RESET PAC and PAC / ERROR-INFO menus
PAC-DATAB.	Access to the PAC / DATABASE menu
PAC-APPL.	Access to the PAC / APPLICATION menu
INTERFACE	Access to all parameters in the INTERFACE menus; the test functions are freely accessible
OPTION 1 OPTION 2 OPTION 3	Program dependent
Comment	If only zeros are entered, the password is not used

5.4 SCALE master mode block

In the first block the weighing platform is selected: SCALE 1 … SCALE 3.
The other setting possibilities are the same for all connected weighing platforms.

5.4.1 Overview of the SCALE master mode block

In the SCALE master mode block the following settings for the weight can be carried out:



Legend

- Blocks highlighted in **grey** are described in detail in the following.
- Factory settings are printed in **bold print**.
- Blocks which only appear under certain conditions have a **dotted outline**.

5.4.2 Settings in the SCALE master mode block

RESET SCALE	**Reset weighing platform to factory setting**	
	WEIGHING-PROC ADAPT	universal weighing
	VIBRATION ADAPTER	average conditions
	STABILITY DETECTOR	ASD = 2
	AUTOZERO	on
	RESTART	off

WEIGHING-PROC ADAPT	**Adapt weighing platform to weighing sample**
UNIVERSAL WEIGHING	For solid bodies, coarse filling or checkweighing (factory setting).
STATIC WEIGHING	For solid bodies and weighing under extreme conditions, e. g. strong vibrations or weighing animals.
FINE FILLING	For liquid or powdered weighing samples.

VIBRATION ADAPTER	**Adapt weighing platform to the vibration influences of the environment**
AVERAGE CONDITIONS	Factory setting.
EXTREME CONDITIONS	The weighing platform operates more slowly, however is less sensitive, e. g. suitable with building vibrations and vibrations at the weighing location.
IDEAL CONDITIONS	The weighing platform operates very quickly, however is very sensitive, e. g. suitable with very calm and stabile weighing location.

STABILITY DETECTOR	**Adapt automatic stability detector**	
	Possible settings:	
	ASD = 0	Stability detector switched off (only possible with non-certified weighing platforms)
	ASD = 1	fast display — good reproducibility
	ASD = 2	▲ — ▼ (factory setting)
	ASD = 3	▲ — ▼
	ASD = 4	slow display — very good reproducibility

AUTOZERO	**Switch automatic zero-point correction on or off**
	The automatic zero-point correction corrects the weight of minor dirt with the weighing platform unloaded. Factory setting: AUTOZERO ON

RESTART	**Switch restart function on or off**
	When RESTART ON is set, the zero point and tare value remain stored after the power supply is interrupted. When the weighing platform is switched on again, the terminal shows the current weight. Factory setting: RESTART OFF

DISPLAY UPDATE	**Set display speed of the weight display**
	Select number of updates per second (UPS). Possible values: 6, 10, 15, 20 UPS
Comments	• This block only appears when the DISPLAY UPDATE function is supported by the connected weighing platform. • The possible settings are dependent on the connected weighing platform.

5.5 INTERFACE master mode block

Select the interface connection

➜ Select the interface connection in the first block: COM1 through COM9.

Possible interface types

- GA46 — For connection of the GA46/GA46-W printer. Data is exchanged via the RS232-690 interface. The other setting possibilities are described in the operating and installation instructions GA46.
- SERIAL — An RS232-690, CL 20mA-690, RS422-690 or RS485-690 interface must be connected to the selected connection. For additional settings, see Page 28.
- 4 I/O — Only for COM5/COM6. A 4 I/O-690 interface with relay box 4-690 must be installed on the interface connection for this purpose. For other settings, see Page 28.
- RELAY BOX 8 — Only for COM2 through COM9. An RS485-690 interface with relay box 8-690 must be installed on the interface connection for this purpose. For other settings, see Page 29.
- TCP/IP — Only for COM2 through COM9. An Ethernet-690 interface must be connected to the selected interface connection. For additional settings, see Page 40.
- FTP-CLIENT — Only for COM2 through COM9. An Ethernet-690 interface must be connected to the selected interface connection. For additional settings, see Page 43.
- PROFIBUS-DP — Only for COM2 through COM9 with installed Profibus-DP-690 interface. For additional settings, see Page 45.
- ALIBI MEMORY — Only for COM2 through COM9. An Alibi Memory-690 must be installed on the selected interface connection for this purpose. No further settings are required in the master mode.
- ANALOG OUTPUT — Only for COM2 through COM9 with installed Analog Output-690 interface.

SERIAL	**Parameters of the standard COM interface driver for serial interfaces. Some parameters are not editable (dependent on the program)**
SWITCH ON/OFF	Switches the function of this driver on or off.
MODE	Changes interface parameters.
BAUDRATE	Possible settings: 150, 300, 600, 1200, 2400, 4800, 9600, 19200 Baud
PARITY	Possible settings: Parity even, Parity odd, No parity, Parity mark, Parity space
DATABITS	Possible settings: 7 databits, 8 databits
STOPBITS	Possible settings: 1 stopbit, 2 stopbits
END-CHARACTERS	Possible settings: End-character 1, end-character 2
TEST	Test function for communication testing. All characters received over the interface are shown in the display. Simple character strings can be sent, if desired.

4 I/O	**Parameters of the I/O module. Some parameters are not editable (dependent on the program)**
SWITCH ON/OFF	Switches the function of this driver on or off.
TEST	Test function for testing the 4 I/O module The display shows the signal over inputs 1–4. Outputs 1–4 can be switched on or off using keys 1–4.
Important	**Please ensure that no system functions are activated inadvertently!**

RELAY BOX 8	
SWITCH ON/OFF	Switches the function of this driver on or off.
I/O TEST	Tests function and state of inputs/outputs of 1 or 2 connected relay boxes 8-690 When an input or output is set (high), its number is shown in the display. When an input or output is not set (low), – is shown in the display. **Setting outputs** Switch outputs using keys 1 to 8 of the numeric keypad. **Setting inputs** Inputs can be set by connecting a voltage supply (+24 V), for example. **Multiple relay box 8-690** Switch over to further relay box 8-690 using the ENTER key.
Comment	The relay box 8-690 corresponds with the BIU Binary Interface Unit. For additional information, see the operating and installation instructions for the 505918A Binary Interface Unit.

TCP/IP	**Parameters of the TCP/IP driver which parameterises the Ethernet-690 interface**
SET TERMINAL IP ADDRESS	This configuration item is only displayed if the Ethernet-690 interface has not been configured correctly yet, refer to the following page.
NETWORK	
TERMINAL IP ADDRESS	Enter the IP address
SUBNET MASK	Enter the net mask
GATEWAY	Enter the gateway address
PING	Enter a ping to another IP address
MAC ADDRESS	Display the Mac address
CONNECTION	
VP1: xxxxxxxx VP2: XXXXXXXX VP3: XXXXXXXX	Virtual Port 1, 2 or 3 with program-specific designation xxxxxxxx Other settings: SWITCH ON/OFF – Switches the function of the driver on or off CLIENT/SERVER – Display whether the CLIENT or SERVER operating mode is selected PORT – Set the port number of the connection COMPUTER IP – Enter the IP address of the host computer. Only possible in the CLIENT mode TEST – Test function

Set terminal IP address

1. Enter the permissible IP address in order to carry out the basic configuration of the Ethernet-690 interface.
2. Start a browser on a computer in the same network segment (for example, Microsoft Internet Explorer).
3. Enter the IP address of the Ethernet-690 interface.
   The following login prompt is displayed:

4. If appropriate, enter the password.
   The Com server can now be configured

Configuration of the Com server

1. Set the Com server to the factory setting. To do so, click the following command buttons: Login –> OK –> Logout –> Restore Default.
2. Deactivate the "C+Addr" mode. To do so, click the following command buttons:
   Login –> OK –> SETUP Port 0 (High-Speed Serial) –> TCP/IP Mode
   –> TCP Client –> Client: "C+Addr" ☐ –> Send –> Back –> Logout –> Save.
3. Activate the Serial Socket Interface. To do so, click the following command buttons:
   Login –> OK –> SETUP Port 0 (High-Speed Serial) –> TCP/IP Mode
   –> Serial Socket Interface –> Serial Protocol ☑ –> Serial Coding ☑ –> Send
   –> Back –> Logout –> Save.
4. Switch the IND690-Sys off and then on again.
   The further configuration can now be carried out.

Note

If no IP address can be entered: Check whether the Ethernet-690 interface is installed correctly. If appropriate, call the METTLER TOLEDO Service.

FTP CLIENT	Parameters of the FTP client driver which parameterises the Ethernet-ID7 interface as an FTP client
SWITCH ON/OFF	Switches the function of this driver on or off.
IP ADDRESS	Network IP address of the IND690-Sys: This address must be assigned by IT personnel under the administrator. It must be unique within the network. Entry format: 000.000.000.000 Example: 176.120.98.3
FTP SECURITY	Enter the FTP username and the accompanying FTP password for the IND690-Sys. Both must be assigned by IT personnel of the administrator, who will also enter these data into his FTP server program. The IND690-Sys identifies itself to the FTP server under the FTP username.
FTP FILE	Enter the drive, directory and name of the file which is to be transferred from the IND690-Sys to the FTP server. Valid directory identification conventions (examples): C:\OS\TEST\ or /C/OS/TEST/ A "\" or "/" must always be entered as the last character.
RECEIVE TIMEOUT	This timeout can be extended after a connection until the IND690-Sys aborts and displays a fault message. The FTP server program should identify itself during this timeout. This timeout is strongly dependent upon the administrator's network load. Factory setting: 3000 ms.
TEST	Test function which establishes an FTP connection from the IND690-Sys to a computer. A simple character string which is to end up in a file in the target computer must be entered. The parameters of the FTP SECURITY and FTP FILE menus are used for the connection. The IND690-Sys reports whether or not the characters could be transferred successfully. At the latest, this is done after the receive timeout has been extended. In addition, the reply from the FTP server program is displayed in 2 receive strings.

Note

The IP address of the target computer can **not** be entered in the master mode. For this purpose, a TELNET connection must be established by an external computer.

Additional FTP CLIENT settings

The Ethernet-690 interface controls a large number of parameters, only the most important of which are to be set in the master mode of the IND690-Sys. Most other parameters can only be set when a browser connection is to be established from a computer on the network to the IND690-Sys.

Establish the browser connection

1. Start a browser on a computer in the same network segment (for example, Microsoft Internet Explorer).
2. Enter the IP address of the Ethernet-690 interface.
   The following login prompt is displayed:

3. If appropriate, enter the password.
   The Com server can now be configured

Configuration of the Com server

1. Set the Com server to the factory setting. To do so, click the following command buttons: Login –> OK –> Logout –> Restore Default.
2. Deactivate the "C+Addr" mode. To do so, click the following command buttons:
   Login –> OK –> SETUP Port 0 (High-Speed Serial) –> TCP/IP Mode
   –> TCP Client –> Client: "C+Addr" ☐ –> Send –> Back –> Logout –> Save.
3. Set the port number of the FTP protocol and the IP address of the computer on which the FTP server program is running. To do so, click the following command buttons:
   Login –> OK –> SETUP Port 0 (High-Speed Serial) –> TCP/IP Mode
   –> FTP Client –> Server Port (21): 00021 –> Server IP: xxx.xxx.xxx.xxx
   –> Auto FTP: ☐ –> Inactive. Timeout: 30 –> Protocol Char: 3 –> Send –> Back –> Logout –> Save.
4. Switch the IND690-Sys off and then on again.
   The further configuration can now be carried out.

PROFIBUS-DP	**Configuring Profibus-DP-690**
SWITCH ON/OFF	Switches the function of this driver on or off.
NODE ADDRESS	Selects the desired node address from a range of 001 to 126.
OPERATING MODE	Possible settings: 4 words 8 words
TEST	Test function for testing the Profibus I/O values

ANALOG OUTPUT	**Configuring the analog output**
SWITCH ON/OFF	Switches the function of this driver on or off.
TEST	Test function for testing the analog output. Entered values can range from 0 to 16383.

6 What to do if....?

Error / Message	Possible causes	Rectification
Display dark	• No line voltage	➜ Check power supply
	• Terminal switched off	➜ Switch on terminal
	• Power cable not plugged in	➜ Insert power plug
	• Momentary interference	➜ Switch terminal off and then on again
Weight display unstable	• Restless installation location	➜ Adjust vibration adapter
	• Draft	➜ Block draft
	• Interference between load plate and/or materials being weighed and environment	➜ Rectify interference
	• Power supply interference	➜ Check power supply
Incorrect weight display	• Incorrect zeroing of weighing platform	➜ Unload weighing platform, repeat zeroing and weighing
	• Incorrect tare value	➜ Delete tare or enter correct tarevalue
	• Interference between load plate and/or materials being weighed and environment	➜ Rectify interference
	• Weighing platform tilted	➜ Level out weighing platform
	• Incorrect weighing platform selected	➜ Select correct weighing platform
IDENTCODE =	• Test cycle started	➜ Complete test by pressing the ZERO-SET key
----------	• Load plate not in place	➜ Put load plate in place
	• Pre-load not in place	➜ Load pre-load
	• Weighing range dropped below	➜ Set to zero
	• Weighing range exceeded	➜ Unload weighing platform
	• Weighing platform locked	➜ Release lock
SCALE ERROR	• Error in weighing platform	➜ Test weighing platforms
		➜ If message appears again: Inform METTLER TOLEDO Customer Service
SCALE OVERLOAD	• Weighing range exceeded	➜ Unload weighing platform
TOTAL IS NEGATIVE	• Total weight is negative	➜ Unload weighing platform and set to zero
TARING ERROR	• Taring not possible, as total weight is negative	➜ Unload weighing platform and set to zero, repeat taring

Error / Message	Possible causes	Rectification
SET TO ZERO ERROR	• Zero-set range exceeded	➜ Unload weighing platform and set to zero
SCALE IN MOTION	• Weight value does not remain constant	➜ Wait until weighing platform shows weight value which remains constant
	• Restless environment	➜ Ensure low-vibration environment ➜ Check setting of vibration adapter ➜ If message appears again: Inform METTLER TOLEDO Customer Service
SCALE NOT ZERO	• Zero point has shifted	➜ Set to zero
PRINTER OFFLINE	• Printer switched off	➜ Switch on printer
NO PAPER	• No paper in printer	➜ Insert paper
PRINTER ERROR	• General printer error	➜ Inform METTLER TOLEDO Customer Service
MEMORY CLEARED	• New software in IND690-Sys, all data reset to factory setting	–
NO ALIBI MEMORY	• No alibi memory found	➜ Inform METTLER TOLEDO Customer Service
ALIBI VERSION < 1.5	• Old version of Alibi memory-690	➜ Update Alibi memory-690
END OF FILE	• End of file	➜ Inform METTLER TOLEDO Customer Service
ALIBI ERROR	• Error in alibi memory	➜ Inform METTLER TOLEDO Customer Service
ETHERNET ERROR	• Ethernet card error	➜ Inform METTLER TOLEDO Customer Service
NO SCALE FOUND	• Round plug not plugged in correctly	➜ Insert plug correctly
	• Load-cell cable not connected properly	➜ Inform METTLER TOLEDO Customer Service
	• Not all scales connected	➜ Connect weighing platforms and/or connect mating connectors to available weighing platform connections

Error / Message	Possible causes	Rectification
SCALE NO. ERROR	• Error in weighing cell	➜ Repeat test ➜ If message appears again: Inform METTLER TOLEDO Customer Service
	• Two or more connected weighing platforms have identical scale number	➜ Inform METTLER TOLEDO Customer Service
NO CONTACT TO FTP SERVER	• Network connection faulty • FTP server program not installed on external computer	➜ Rectify network connection problem ➜ Install FTP server program
WRONG CODE	• Incorrect personal code • Incorrect information in FTP SECURITY or FTP FILE	➜ Enter correct personal code ➜ Enter permissible values for username, password, drive, directory and file name
DATABASE INIT ERROR	• Database could not be initialised	➜ Inform METTLER TOLEDO Customer Service

7 Technical data

Weighing functions	
Tare compensation	At the press of a button or automatically, up to maximum load (subtractive)
Tare target value	• For single-range scales over entire weighing range (subtractive) • For multi-range scales depending on national calibration regulations
Tare indicator	NET lights up with saved tare weight
Setting to zero	Automatic or manual
Weighing process adapter	3-step adjustment to weighing sample
Vibration adapter	3-step adjustment to ambient conditions
Info function	Displays of system functions
Date and time	• For printout or output via the data interface • Quartz-controlled, 12 or 24-hour display, automatic calendar function, Europe or USA format, safe against power failure

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Mettler-Toledo (Albstadt) GmbH
D-72458 Albstadt
Tel. ++49-7431-14 0, Fax ++49-7431-14 232
Internet: http://www.mt.com