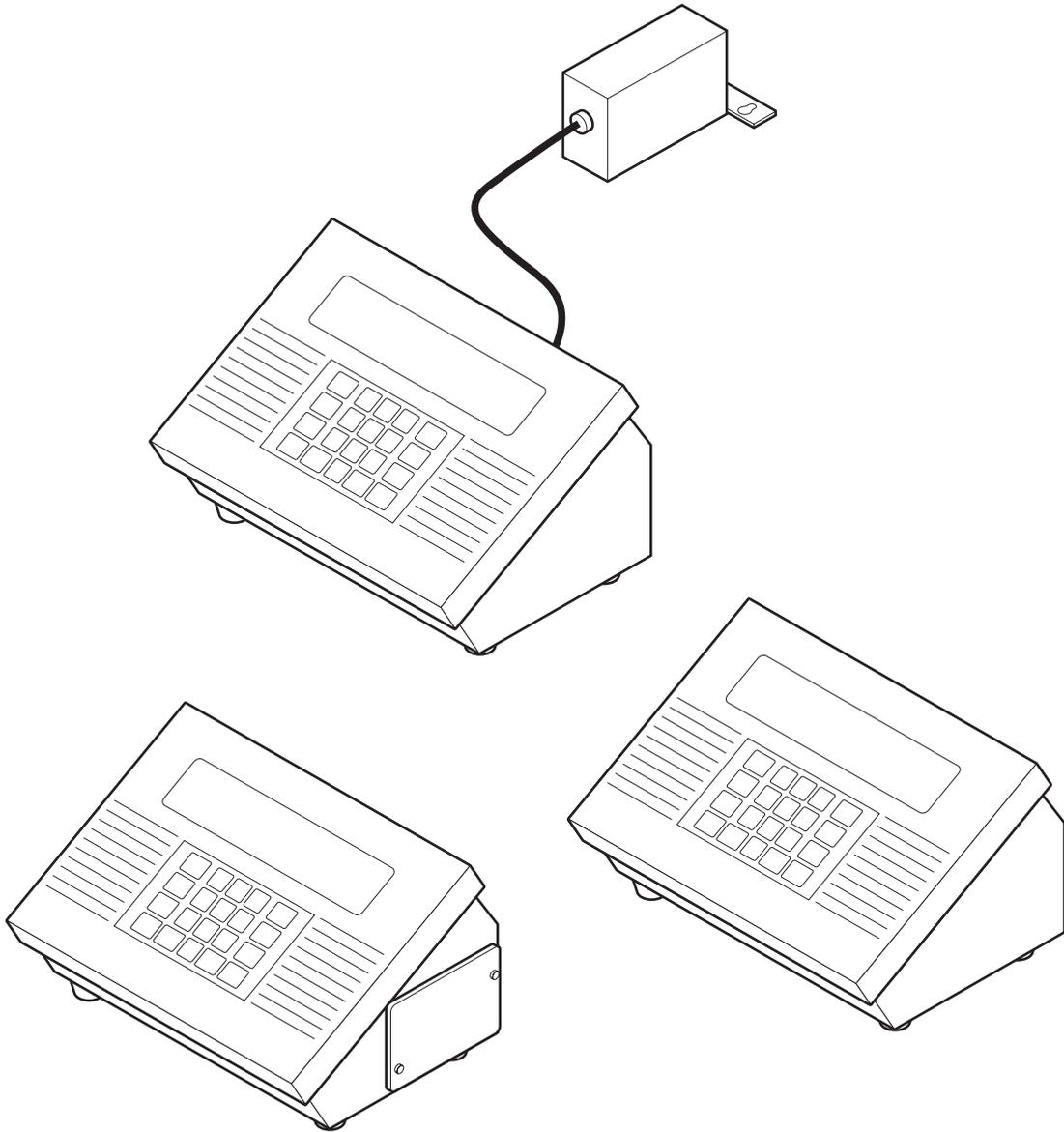


Operating instructions

METTLER TOLEDO MultiRange ID3sTx explosionproof weighing terminal

METTLER TOLEDO



www.mt.com/support

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1 Safety instructions



There is an increased risk of injury and damage when the explosionproof ID3sTx weighing terminal is used in a potentially explosive atmosphere.

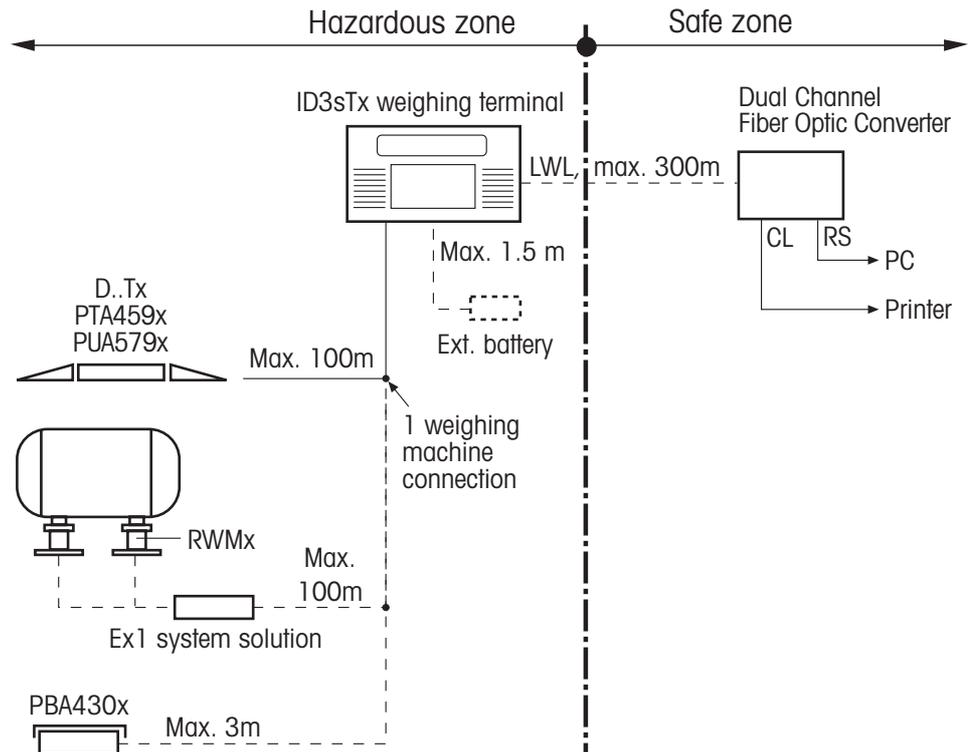
Special care must be taken when working in such hazardous areas. The code of practice is oriented to the "Safe Distribution" concept drawn up by METTLER TOLEDO.

- Competence**
- ▲ The ID3sTx weighing terminal may only be installed, maintained and repaired by authorized METTLER TOLEDO service personnel.
 - ▲ The ID3sTx weighing terminal with built-in power supply unit may only be connected or disconnected to/from the mains by a qualified electrician.
- Ex approval**
- ▲ 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 intrinsic safety of the system, cancels the Ex approval and renders any warranty or product liability claims null and void.
 - ▲ The safety of a weighing system including the ID3sTx 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 relevant national regulations and standards,
 - the applicable statutory requirements for electrical equipment installed in hazardous atmospheres in the respective country,
 - all instructions related to safety issued by the operator.
 - ▲ The explosion-protected weighing system must be checked to ensure compliance with the requirements for safety before being put into service for the first time, following any service work and every 3 years, at least.
- Operation**
- ▲ Prevent the build-up of static electricity. Always wear suitable working clothes when operating or performing service work on the system.
 - ▲ Never use protective hoods from other weighing terminals.
- Battery operation**
- ▲ Always charge the batteries in a safe zone. Install and use METTLER TOLEDO battery chargers in the safe zone. Use the chargers specified by METTLER TOLEDO only.
 - ▲ Never try to open or repair batteries. They are intrinsically safe and are irreparable. Recycle defective batteries or dispose of them in the proper manner.

2 System overview

2.1 The explosionproof weighing system

A weighing system designed for operation in hazardous zones 1 and 21 comprises the following components:



ID3sTx weighing terminal

The weighing terminal designed for use in a potentially explosive atmosphere is characterized by the following features:

- Stainless steel enclosure with large high-contrast liquid-crystal display.
- Numerical keypad to enter default tare values, for example.
- Power supplied by an internal or external battery or an internal power supply unit.
- Up to 2 fiber-optic data interfaces for data communication with peripheral equipment, such as printer, PC or setpoint controller.

Type of protection	II 2 G EEx ib IIC T4
	II 2 D IP65 T 50 °C
IP degree of protection	IP65

Intrinsically safe power supply

There are 3 intrinsically safe power supplies to the weighing terminal and weighing platform for the ID3sTx weighing terminal:

Internal battery

Type of protection II 2 G EEx ib IIC T4

When the ID3sTx is used in a zone 21 area, the internal battery may only be operated within the housing of the ID3sTx.

External battery

The terminal is equipped with a 1.5 m cable to enable connection to an external battery.

Type of protection II 2 G EEx ib IIC T4

II 2 D IP65 T 120 °C



Internal AC power supply unit

Type of protection II 2 G EEx m e [ib] IIC T4

Preassembled mains cable 5 m

In a hazardous zone, the terminal must be connected up to the mains in accordance with the applicable national installation regulations.

When the ID3sTx is used in a zone 21 area, the internal AC power supply unit may only be operated within the housing of the ID3sTx.

Weighing platforms ...x

METTLER TOLEDO weighing platforms are available for various maximum loads and readability requirements, equipped with explosionproof extension measuring cells.

Weighing platforms manufactured by other companies may only be connected to the terminal if they fulfil the specifications in the terminal connection diagram (see guide for installers).

DN...Tx, PTA459x, PUA579x

Type of protection II 2 G EEx ia IIC T4

II 2 D IP68 T 80 °C

IP degree of protection IP68

Preassembled cable 5 m long

DB...Tx, DCS...Tx

Type of protection II 2 G EEx ia IIC T4

II 2 D IP67 T 80 °C

IP degree of protection IP67

Preassembled cable 5 m long

PBA430x

Type of protection	II 2 G EEx ia IIC T4
	II 2 D IP65 T 150 °C
IP degree of protection	IP68, IP69K
Preassembled cable	1.5 m capacity ≤ 30 kg
	2.5 m capacity ≥ 60 kg

RWM1x (0.5 t / 1 t)

Type of protection	II 2 G EEx ib IIC T6
	II 2 D IP67 T 70 °C
IP degree of protection	IP67
Preassembled cable	5 m long

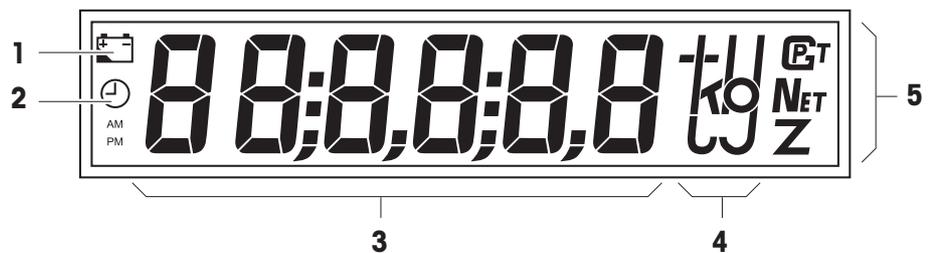
System solution Ex1 is required for RWM1x. Up to 4 RWMx can be connected to this system solution. Preassembled cable: 5 m long

Dual Channel Fiber Optic Converter

The Dual Channel Fiber Optic Converter has 2 data interfaces; it may only be used in the **safe zone**.

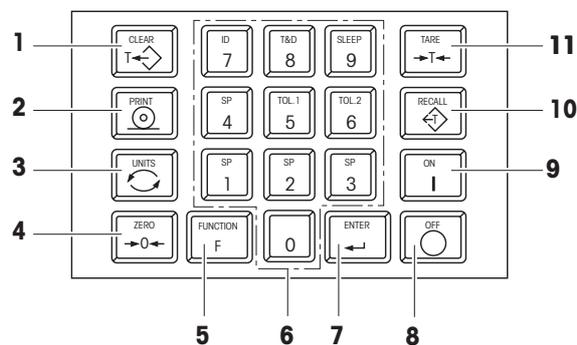
An RS232 or CL terminal is available at each data interface.

The weighing terminal must be equipped with one or two fiber optic data interfaces for data transfer.

2.2 The ID3sTx weighing terminal**2.2.1 Display**

- 1 Battery symbol – lights up when the battery needs charging
- 2 Clock symbol – lights up when the time is displayed or entered
- 3 6-digit digital display
- 4 Weight units
- 5 Status indicators – one of the symbols lights up for stationary weight values

2.2.2 Keypad



1 CLEAR

2 PRINT

3 UNITS

4 ZERO

5 FUNCTION

supplementary functions are activated in combination with numerical keys

6 Numeric keypad

7 ENTER

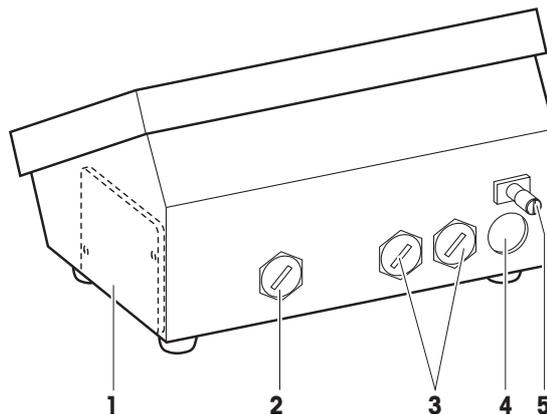
8 OFF

9 ON

10 RECALL

11 TARE

2.2.3 Connections



1 Battery compartment – for internal battery only

2 Power supply – external battery (with cable), AC power supply unit (with cable); terminal not provided when internal battery used

3 Optional interface terminals

4 Weighing platform terminal

5 Equipotential bonding terminal

3 Basic functions



3.1 Safety instructions

EXPLOSION HAZARD

→ Always comply with the safety instructions in Chapter 1 when working with the ID3sTx weighing terminal.

3.2 Switching on/off

3.2.1 Switching on

1. Remove any load acting on the weighing platform.
2. Press the ON key; the display indicates 0.000 kg.

3.2.2 Switching off manually

1. Remove any load acting on the weighing platform.
2. Press the OFF key; the display goes dark.

Caution

The FUNCTION + 9 key combination must be used to switch the terminal off instead of the OFF key if automatic switch-off with retention of the zero and tare values when reactivated has been programmed in Setup mode. Error message E11 will otherwise appear when the terminal is switched on again.

3.2.3 Automatic switch-off

Requirement

- Sleep mode must have been activated in Setup.

The ID3sTx weighing terminal switches off automatically if no actions are performed at the terminal within the period programmed in Setup.

Caution

The FUNCTION + 9 key combination must be used to switch the terminal off instead of the OFF key if automatic switch-off with retention of the zero and tare values when reactivated has been programmed in Setup mode. Error message E11 will otherwise appear when the terminal is switched on again. The entered zero point, tare value and ID number are then erased. To remedy the problem, refer to Section 7.1.

3.3 Zeroing

Zeroing compensates for the weight of dust and slight soiling on the load plate. Zeroing can only be performed within the range programmed in Setup mode.

1. Remove any load acting on the weighing platform.
2. Press the ZERO key; the displayed value changes to 0.000 kg.

3.4 Taring

3.4.1 Taring manually

1. Place an empty container on the plate.
2. Press the TARE key; the displayed value is reset to 0.000 kg and the "Net" symbol lights up.

All values displayed from now on are net weights referred to the stored tare weight.

3.4.2 Tare weight input

1. Place a full container on the weighing platform.
2. Use the numeric keypad to enter the known weight of the container.
3. Press the TARE key;
the display changes to the net weight display, and the "Net" symbol lights up.

All values displayed from now on are net weights referred to the stored tare weight.

Note

If restrictions have been entered for the taring function in Setup, you will only be able to enter a known tare weight when there is no load acting on the weighing platform.

3.4.3 Recalling the tare weight

→ Press the RECALL key.

The stored tare weight is displayed briefly. The weighed net value is then returned to the display.

3.4.4 Erasing the tare weight

Erasing the tare weight manually

Requirement

- The taring function must be set to "not protected" in Setup.

→ Press the CLEAR key.

The entered tare weight is erased and gross weight values are displayed again.

Erasing the tare weight automatically

Requirement

- Automatic tare value erasure must have been activated in Setup.

The tare weight is erased automatically when the load is removed from the weighing platform following the weighing operation.

3.5 Changing the units of measurement

Notes

- The units available for selection are kg, lb and a user-defined unit of measurement.
- The "Change units" function will not be available if the statutory calibration requirements in the country concerned only permit one unit of measurement.
- The user-defined unit is displayed without a unit symbol.

Requirements

- The weighing system has been calibrated in kg or lb.
- Unit changeover has been activated in Setup.
- If required: the user-defined unit has been defined.

→ Press the UNITS key; the current weight is displayed in the second unit of measurement.

3.6 Transferring and printing data

Requirement

- The optional serial interface has been installed and demand mode has been activated in Setup.

→ Press the PRINT key.

The currently displayed data is transferred via the serial interface and is output in accordance with the formatting programmed in Setup.

Note

It will not be possible to transfer and print data if the weighing platform

- is not at rest,
- is operating at high resolution, or
- is in underload or overload range.

4 Settings and supplementary functions

4.1 Safety instructions



EXPLOSION HAZARD

→ Always comply with the safety instructions in Chapter 1 when working with the ID3sTx weighing terminal.

4.2 Setpoint configuration

Setpoint values can be used to increase or reduce the metered quantity of weighed goods in metering applications. The ID3sTx offers the following facilities for this according to the setting programmed in Setup:

Filling to setpoint at the same metering speed

4 metering operations can be programmed with this procedure. The metering operation is determined by the following values:

- Setpoint = Target weight
- After-flow compensation
- Tolerance, can be selected as a setpoint tolerance or a zero tolerance

"4 setpoints" must be set in Setup for this.

Filling with coarse and fine flow rate

This involves filling the material into containers at 2 different speeds. The material flows at high speed (coarse flow) up to a programmable changeover point, after which it continues to flow at a slower speed (fine flow) up to the cut-off point.

It is therefore possible to program 2 different metering operations.

The metering operation is determined by the following values:

- Setpoint = Target weight
- After-flow compensation
- Changeover point between coarse and fine flow
- Tolerance, can be selected as a setpoint tolerance or a zero tolerance

"2 setpoints" must be set in Setup for this.

After-flow compensation

Material continues to flow after the filling operation is terminated. The cut-off point for the filling machine must be selected in such a way as to ensure that the final weight is achieved following the after-flow to ensure that the actual weight is not higher or lower than the required value.

4.2.1 Entering setpoint values for the same metering speed

Requirement

- "4 setpoints" activated in Setup.

Note

The input prompts must be confirmed without delay as the weighing terminal otherwise returns to normal mode.

Entering the target weight

1. Press the FUNCTION key and select one of the four setpoint values using the numerical keypad; [SP- x] appears on the display.
2. Press the ENTER key; the programmed target weight appears on the display.
3. Use the numerical keypad to enter a new target weight and confirm it by pressing the ENTER key or press the ENTER key to confirm the displayed target weight.

Entering the after-flow correction factor

4. [Pr- x] is displayed. Press the ENTER key; the programmed cut-off point appears on the display.
5. Use the numerical keypad to enter a new cut-off point and confirm it by pressing the ENTER key or press the ENTER key to confirm the current cut-off point.

Entering tolerance

If parameter 82 = 0 and parameter 83 = 0:

Enter zero tolerance for target value 1 and target value 2.

6. Press the FUNCTION key and the 5 key to select the tolerance for setpoint 1 or the 6 key to select the tolerance for setpoint 2. [Tol - x] appears on the display.
7. Press the ENTER key; the programmed zero tolerance appears on the display.
8. Use the numerical keypad to enter a new tolerance and confirm by pressing the ENTER key or press the ENTER key to confirm the current tolerance.
9. Press the ENTER key again; the weighing terminal returns to normal mode.

If parameter 82 = 1 and parameter 83 = 1:

Enter target value tolerance for target value 1 and target value 2.

6. [tol- x] is displayed. Press the ENTER key; the currently set shutoff point appears in the display.
7. Use the numerical keypad to enter a new tolerance and confirm by pressing the ENTER key or press the ENTER key to confirm the current tolerance.
8. Press the ENTER key again; the weighing terminal returns to normal mode.

4.2.2 Entering two setpoint values

Requirement

- "2 setpoints" activated in Setup.

Note

The input prompts must be confirmed without delay as the weighing terminal otherwise returns to normal mode.

Entering the target weight

1. Press the FUNCTION key and, using the numerical keypad, select one of the two setpoints; [SP- x] appears on the display.
2. Press the ENTER key; the programmed target weight appears on the display.
3. Use the numerical keypad to enter a new target weight and confirm by pressing the ENTER key or press the ENTER key to confirm the programmed target weight.

Entering the coarse flow / fine flow switchover point

4. [Dr- x] is displayed. Press the ENTER key; the currently programmed switchover point appears on the display.
5. Use the numerical keypad to enter a new switchover point and confirm by pressing the ENTER key or press the ENTER key to confirm the programmed switchover point.

Entering the after-flow correction factor

6. [Pr- x] is displayed. Press the ENTER key; the currently programmed cut-off point appears on the display.
7. Use the numerical keypad to enter a new cut-off point and confirm by pressing the ENTER key or press the ENTER to confirm the currently programmed cut-off point.

Entering the tolerance

8. [tol- x] or [Otol- x] is displayed. Press the ENTER key; the currently programmed cut-off point appears on the display.
9. Use the numerical keypad to enter a new tolerance and confirm by pressing the ENTER key or press the ENTER to confirm the currently programmed tolerance.
10. Press the ENTER key again; the weighing terminal returns to normal mode.

4.3 Date and time

The time is always displayed in 24-hour format; the date is displayed in accordance with the format specified in Setup.

Note

The input prompts must be confirmed without delay as the weighing terminal otherwise returns to normal mode.

Entering the time

1. Press the FUNCTION key followed by the 8 key; the set time appears on the display.
2. Press the ENTER key to confirm the displayed time or the CLEAR key to erase the displayed time.
3. Use the numerical keypad to enter the time in 24-hour format and confirm by pressing the ENTER key.

The time has now been stored and the set date appears on the display automatically.

Entering the date

4. Press the ENTER key to confirm the displayed date or the CLEAR key to erase the displayed date.
5. Use the numerical keypad to enter the date in the displayed format.
6. Press the ENTER key; the weighing terminal returns to normal mode.

4.4 Characteristics memory

The ID3sTx is equipped with a characteristics memory to facilitate identification of the weighing system or individual weighing operations. You can perform the following operations with the 6-digit ID number stored in this memory:

- change it,
- print it or
- transfer it via the data interface.

Note

The input prompts must be confirmed without delay as the weighing terminal otherwise returns to normal mode.

4.4.1 Changing the ID number

1. Press the FUNCTION key, followed by the 7 key; the current content of the characteristics memory (ID number) appears on the display.
2. Press the ENTER key to confirm the current ID number or the CLEAR key to erase the current ID number.
3. Use the numerical keypad to enter another 6-digit ID number.
4. Press the ENTER key; the weighing terminal returns to normal mode.

5 Configuring the weighing system in Setup mode



EXPLOSION HAZARD

→ The weighing terminal enclosure may only be opened and programmed in Setup mode by suitable qualified personnel.

5.1 Configuration with calibration capability

All METTLER TOLEDO weighing platforms of the D...Tx, PTA459x, PUA579x and PBA430x can be operated with the ID3sTx in a configuration with calibration capability.

Special-purpose weighing platforms, comprising METTLER TOLEDO RWM1x modules, and weighing platforms manufactured by other companies may only be operated in a configuration with calibration capability if they fulfill the requirements for minimum sensitivity for each calibration value, refer to Section 5.8.



Settings approved for calibration

Not all of the settings that are possible in Setup mode are approved for calibration.

Restrictions are imposed on the parameters given in the table below for operations that are subject to calibration requirements.

The weighing system cannot be calibrated if the setting for one of the parameters given in the table is not approved.

Parameters that are not included in this table do not affect calibration capability.

Parameter	Settings approved for calibration	Remarks
13	1 = $\leq \pm 0.5 d$	Automatic zeroing within the $\leq \pm 0.5 d$ range only
15	1 = $\pm 2 \%$	Resetting range $\pm 2 \%$ of the maximum load
16	1 = $\geq 0.5 d$ 2 = $\pm 1 d$	Values that only differ by the set value are regarded as being stationary weight values
18	Entered value \leq maximum load +9 e	Overload display when the maximum load has been exceeded by 9 e at the latest
37, 57	0 = Print negative net weights with sign	
43, 63	1 = Printout with weight unit	
71	0 = No unit changeover 1 = Changeover kg \leftrightarrow lb	Undefined units are not permitted in operations that are subject to calibration requirements
74	1 = PT	Numerically specified tare values must be identified by PT
91	0 = Normal resolution	Higher resolution not permitted for operations that are subject to calibration requirements

5.2 Overview of Setup mode

- Settings approved for calibration are identified by a *.
- Factory setting are printed **in bold type**.

<p>00 Calibration</p> <p>01 Calibration unit 0 = lb 1 = kg 2 = g 3 = t</p> <p>02 Linearity compensation 0 = off 1 = on</p> <p>04 Maximum load 1 ... 100000</p> <p>05 Reading accuracy Enter numerical increment and position of the decimal point</p> <p>08 Calibration 0 = terminate calibration 1 = start calibration</p> <p>09 Update rate 0 = 16 measurements/s 1 = 14 measurements/s 2 = 12 measurements/s 3 = 10 measurements/s 4 = 9 measurements/s 5 = 8 measurements/s 6 = 7 measurements/s</p> <p>10 Zeroing and filters</p> <p>11 Set absolute zero 0 = go on to 12 1 = save</p> <p>12 Set span 0 = go on to 13 1 = enter the span</p> <p>13 Automatic zeroing 0 = off * 1 = within range $\leq \pm 0.5$ d 2 = within range $\leq \pm 1$ d 3 = within range $\leq \pm 3$ d 4 = within range $\leq \pm 0.5$ d 5 = within range $\leq \pm 1$ d 6 = within range $\leq \pm 3$ d</p>	<p>14 Automatic zeroing at switch-on 0 = off (Restart active) 1 = ± 2 % of capacity 2 = ± 10 % of capacity</p> <p>15 Automatic zeroing by pressing a key 0 = off *1 = ± 2 % of capacity 2 = ± 20 % of capacity</p> <p>16 Standstill check 0 = off *1 = ≥ 0.5 d *2 = ± 1.0 d 3 = > 2.0 d 4 = > 3.0 d</p> <p>17 Vibration adapter (filter settings) 0 = 0.25 s 1 = 0.35 s 2 = 0.60 s 3 = 0.75 s 4 = 1.2 s 5 = 1.6 s 6 = 2.0 s 7 = 2.4 s</p> <p>18 Overload/underload display Enter weight value *Approved for calibration: max. + 9 e</p> <p>19 Geo value 01... 26, 19</p>	<p>20 Tare and timers</p> <p>21 Tare 0 = off 1 = by pressing a key 2 = by pressing a key and tare preset</p> <p>22 Protect taring function 0 = not protected 1 = protected</p> <p>24 Tare autoclear 0 = off 1 = clear tare automatically at zero gross weight</p> <p>25 Weighing system ID 01 ... 99</p> <p>26 Date format 0 = MM:DD:YY 1 = DD:MM:YY 2 = YY:MM:DD</p> <p>27 Sleep mode 0 = off 1 ... 99 = switch-off time in min.</p> <p>30/50COMM1/COMM2</p> <p>31/51 Output operating modes 0 = no serial interface 1 = continuous mode 2 = demand mode 3 = <ENQ> continuous mode 4 = short continuous mode 5 = host mode (31 only) 6 = SICS level 0 mode (31 only)</p> <p>32/52 ASCII remote input mode 0 = off 1 = on</p>	<p>33/53 Baud rate 300 1200 2400 4800 9600</p> <p>34/54 Parity bit 0 = 0 1 = odd 2 = even 3 = 1 4 = no parity bit</p> <p>35/55 Number of data bits 0 = 7 bits 1 = 8 bits</p> <p>36/56 Checksum 0 = no check byte 1 = check byte will be transferred</p> <p>37/57 Print net weight with positive sign (in demand mode only) *0 = print normally 1 = display normally, but print with pos. sign 2 = display and print with pos. sign</p> <p>38/58 STX (in demand mode only) 0 = no STX transfer 1 = STX transfer</p> <p>39/59 Line format when printing (in demand mode only) 0 = one line 1 = several lines</p>
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<p>41/61 Data fields for printout (in demand mode only)</p> <p>0 = field off 1 = displayed weight 2 = gross weight 3 = tare weight 4 = net weight 5 = weighing system number 6 = empty line 7 = date/time 8 = characteristics memory Factory setting: 523400</p> <p>42/62 Print with higher resolution (in demand mode only)</p> <p>0 = normal resolution 1 = higher resolution</p> <p>43/63 Print weight unit (in demand mode only)</p> <p>0 = do not print *1 = print kg/lb</p> <p>44/64 Print the time</p> <p>0 = 24-hour format 1 = 12-hour format</p> <p>45 COMM1 link (in host mode only)</p> <p>0 = address each ID3sTx directly 1 = address all ID3sTx in series</p> <p>70 Country-specific settings</p> <p>71 Unit switchover</p> <p>*0 = Unit key inactive *1 = switch kg/lb 2 = switch between calibrated and user-defined unit</p>	<p>72 Weight unit at switch-on Calibration unit lb/kg (Parameter 01 = 0/1); Switchover lb/kg or no switchover (Parameter 71 = 0/1):</p> <p>0 = kg 1 = lb</p> <p>Calibration unit kg (Parameter 01 = 1); Switchover calibrated/ user-defined unit (Parameter 71 = 2):</p> <p>0 = kg 1 = user-defined unit</p> <p>Calibration unit lb (Parameter 01 = 0); Switchover calibrated/ user-defined unit (Parameter 71 = 2):</p> <p>0 = user-defined unit 1 = lb</p> <p>73 Print weight value in brackets (in demand mode only)</p> <p>0 = print normally 1 = print in brackets</p> <p>74 Tare symbol (in demand mode only)</p> <p>0 = print T *1 = print PT</p> <p>75 Decimal point/decimal comma</p> <p>0 = display and print decimal point 1 = display and print decimal comma</p> <p>76 Display zero (Z)</p> <p>0 = Z off *1 = display Z at ±0.25 d of the gross zero value 2 = display Z at gross or net zero</p>	<p>77 Tare autoclear following printout</p> <p>0 = off 1 = on</p> <p>78 Printout initiation</p> <p>0 = printout for every key depression</p> <p>1 = one printout per weighing operation (at standstill) 2 = automatic printout at standstill</p> <p>79 Excursion for triggering of automatic printout</p> <p>0 = no excursion value defined</p> <p>1 = 10 d 2 = 100 d 3 = 500 d</p> <p>80 Setpoint values</p> <p>81 Setpoint mode</p> <p>0 = off 1 = 4 setpoints 2 = 2 setpoints</p> <p>82 Tolerance 1</p> <p>for 4 setpoints: 0 = zero tolerance assigned to key 5 1 = tolerance for setpoint 1 for 2 setpoints: 0 = zero tolerance 1 = setpoint 1</p> <p>83 Tolerance 2</p> <p>for 4 setpoints: 0 = zero tolerance assigned to key 6 1 = tolerance for setpoint 2 for 2 setpoints: 0 = zero tolerance 1 = setpoint 2</p> <p>84 Setpoint status bit</p> <p>0 = setpoint status bit from 0 to 1 for positive weight signal 1 = setpoint status bit from 0 to 1 when absolute weight > setpoint value</p>	<p>90 Miscellaneous</p> <p>91 High resolution</p> <p>*0 = normal resolution 1 = high resolution</p> <p>92 User-defined unit, position of decimal point in the conversion factor [0.0001] Change value with numerical key 0 and confirm with the ENTER key</p> <p>93 User-defined unit, conversion factor [XXXXXX] Enter conversion factor 0 = no user-defined unit</p> <p>94 User-defined unit, position of decimal point in the display</p> <p>0.0001 0.001 0.01 0.1 1</p> <p>95 Interface Board Function</p> <p>0 = off 1 = on</p> <p>96 External control</p> <p>0 = off 1 = tare 2 = zero setting 3 = print</p> <p>99 Restore factory settings for parameters</p> <p>0 = selected settings are active</p> <p>1 = restore US factory settings 2 = restore European factory settings [SUrE] is displayed. Confirm reset with key 1 or 2.</p>
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5.3 Activating/terminating Setup mode



CAUTION

If the ID3sTx weighing terminal is used for operations that are subject to calibration requirements, the calibration seal is destroyed when the enclosure is opened to access Setup mode.

→ The weighing system must be calibrated and sealed again following termination of Setup mode.

CAUTION

Fluctuations or interruptions in the power supply to the weighing terminal while in Setup mode can lead to calibration errors or a loss of data. A lot of energy is required in Setup mode. This detrimentally affects the service life of the battery.

→ Check the battery symbol. Do not activate Setup mode if the battery symbol lights up.

→ Insert a spare battery and put the original battery on charge.

Note

You do not need to switch the ID3sTx weighing terminal off in order to access Setup mode.

5.3.1 Opening the enclosure



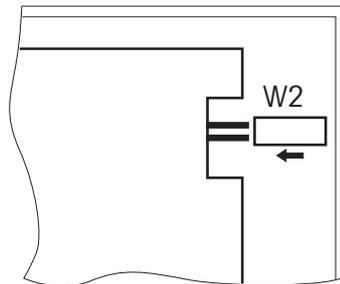
CAUTION

The clips on the enclosure cover have sharp edges.

→ Avoid touching the cover in the areas around the (four) clips to prevent injury to your fingers.

1. Slide a screwdriver into the holes at the front of the cover until you hear an audible snapping noise and the front clips are released.
2. Lift the cover at the front and press towards the rear. The rear clips are released audibly.
3. Lift the cover and remove carefully towards the front. The main PCB, which is fitted inside the cover, is now accessible.

5.3.2 Setting jumper



→ Set jumper W2, on the right-hand side at the front of the main PCB, to the IN position.

The display indicates [--].

5.3.3 Terminating Setup mode



CAUTION

Risk of data loss.

→ Never switch the ID3sTx weighing terminal off while it is in Setup mode, or you will lose all of your settings and changes.

1. Remove jumper W2 to transfer the changes to the memory and return to normal mode.
2. Replace the cover on the weighing terminal enclosure and press down until all of the clips are heard to latch into place, making sure that no cables are trapped.



CAUTION

Observe the calibration specifications.

→ If you are using the ID3sTx weighing terminal for operations that are subject to calibration requirements, make sure that all settings are approved for calibration before terminating Setup mode, refer to the overview in Section 5.2.

5.4 Operator controls in Setup mode

The Setup mode for the ID3sTx weighing terminal is divided into groups of setting parameters.

- When a group is called up, the parameters for the respective group are automatically called up in succession (exception: group 30/50).
- Individual parameters can also be called up directly.

Calling a group

1. Use the numerical keypad to enter the group number, e.g. "10".
The first parameter of the group, e.g. "11", appears on the display.
2. Enter the setting on the keypad.
3. Confirm by pressing the ENTER key.
The next parameter for the group appears on the display.

Calling parameters directly

1. Use the numerical keypad to enter the parameter number, e.g. "11".
Parameter "11" appears on the display.
2. Enter the setting on the keypad.
3. Confirm by pressing the ENTER key.

Changing the setting

1. Use the numerical keypad to enter the required setting.
2. Press the 0 key to move the decimal point.

Switching between predefined settings

→ Press the 0 key.

Erasing an input error

→ Press the CLEAR key.

Returning to the previous step

→ Press the ZERO key.

Adopting the setting

→ Press the ENTER key.

5.5 Settings in Setup mode

5.5.1 Overview of parameter groups

- 00** Calibration (refer to 5.5.2)
- 10** Zeroing and filters (refer to 5.5.3)
- 20** Tare and timers (refer to 5.5.4)
- 30** Serial interface COMM1 (refer to 5.5.5)
- 50** Serial interface COMM2 (refer to 5.5.5)
- 70** Country-specific settings (refer to 5.5.6)
- 80** Setpoint values (refer to 5.5.7)
- 90** Miscellaneous (refer to 5.5.8)

Notes

- Settings that are approved for calibration are identified by an *.
- If none of the settings for a parameter is identified with an *, then the parameter does not affect calibration capability.
- Factory settings are printed **in bold type**.

5.5.2 Parameter group 00 "Calibration"

Parameters 01 to 05 are called up, one after the other.
Parameter 04 can also be called up directly.

01 Calibration unit

0 = lb
1 = kg
2 = g
3 = t

02 Linearity compensation

0 = off
1 = on

04 Maximum load

Stored value appears.
Permitted values: 1... 100000

05 Reading accuracy

Stored value appears.
Enter the numerical increment and the position of the decimal point.

Example The reading accuracy for a weighing platform with 30 kg maximum load and a resolution of 3000 d amounts to 0.01 kg.

→ Enter the value 0.01 and press the ENTER key to confirm.

08 Calibration**Note**

A weighing platform must be calibrated before it can be used in conjunction with the ID3sTx weighing terminal. Failure to comply with this ruling may result in errors occurring if the calibration data stored in the I/O ROM is not the same as the data stored in the weighing platform.

0 = terminate calibration

1 = start calibration (refer to Section 5.6 for the calibration procedure)

09 Update rate

This parameter can only be selected following calibration.

- 0 = 16 measurements/s
- 1 = 14 measurements/s
- 2 = 12 measurements/s
- 3 = 10 measurements/s
- 4 = 9 measurements/s
- 5 = 8 measurements/s
- 6 = 7 measurements/s

5.5.3 Parameter group 10 "Zeroing and filters"

Parameters 11 to 19 are called up, one after the other.

All of the parameters in this group can be called up directly.

11 Setting absolute zero

With no load acting on the weighing platform, store the displayed gross weight in the nonerasable memory as the absolute zero point:

- 0 = go on to parameter 12
- 1 = save

Note

The weighing system must be recalibrated if the absolute zero point is changed.

12 Setting the span

This function can be used to adjust the weighing system within the preferred range.

- 0 = go on to parameter 13

Requirement

- The preferred weight is acting on the weighing platform when Setup mode is activated.

Procedure

1. Press key 1.
2. Enter the correct weight.
The entered value must be a multiple of the set numerical increment (1 d, 2 d, 5 d).

- Example** The display indicates 9.998 kg, but the correct value is 10.000 kg.
→ Enter the value 10.000 and confirm by pressing the ENTER key.

13 Automatic zeroing

0 = off

***1 = within range $\leq \pm 0.5 d$ (gross mode only)**2 = within range $\leq \pm 1 d$ (gross mode only)3 = within range $\leq \pm 3 d$ (gross mode only)4 = within range $\leq \pm 0.5 d$ (gross and net modes)5 = within range $\leq \pm 1 d$ (gross and net modes)6 = within range $\leq \pm 3 d$ (gross and net modes)**Example**Numerical increment $d = 2 \text{ g}$ Factory setting for automatic zeroing: within range $\pm 1 \text{ g}$ **14 Automatic zeroing at switch-on**

0 = off (Restart active)

1 = $\pm 2 \%$ of capacity**2 = $\pm 10 \%$ of capacity****15 Automatic zeroing by pressing a key**

0 = off

***1 = $\pm 2 \%$ of capacity**2 = $\pm 20 \%$ of capacity**16 Standstill check**

When the standstill check is activated, the weight unit is not displayed until the weighing system has come to rest. In this case, zeroing, taring and printout are only possible when the weighing system is stationary.

0 = off

***1 = $\geq 0.5 d$** ***2 = $\pm 1.0 d$** 3 = $> 2.0 d$ 4 = $> 3.0 d$ **17 Vibration adapter (filter settings)**

0 = 0.25 s

1 = 0.35 s

2 = 0.60 s

3 = 0.75 s

4 = 1.2 s

5 = 1.6 s

6 = 2.0 s

7 = 2.4 s

18 Overload/underload display

A weight value, whereby an upper-limit violation of this value is indicated by the overload symbol [r-----].

The overload value also determines the value at which the underload symbol [l-----] is displayed: underload value = maximum load – overload value

* Maximum overload value approved for calibration: maximum load + 9 e

19 Geo value

Correction factor to adapt the weighing system to its installation location. The applicable value for each country is given in the table in the appendix.

01 ... 26

Factory setting: **19**

5.5.4 Parameter group 20 "Tare and timers"

Parameters 21 to 28 are called up, one after the other.

All of the parameters in this group can be called up directly.

21 Tare

0 = off

1 = by pressing a key

2 = by pressing a key and tare preset

22 Protecting the tare function

The following restrictions apply if the tare function is protected:

- The tare value can only be erased and predefined for zero gross weight,
- Multiple taring is not permitted,
- Standstill check cannot be recognized.

0 = tare function not protected

1 = tare function protected

24 Tare autoclear

0 = off

1 = tare value is erased automatically at zero gross weight

25 Weighing system identification

Permitted values: **01** ... 99

Note

Each terminal in a network is assigned a separate 2-digit weighing system identification number. This may only be used once, unlike the 6-digit ID number that can be stored in the characteristics memory.

26 Date format

0 = MM:DD:YY

1 = DD:MM:YY

2 = YY:MM:DD

27 Sleep mode

Battery save mode activates itself if no actions take place on the weighing system during the programmed period.

0 = sleep mode off

1 ... 99 = switch-off time in minutes

5.5.5 Parameter group 30 "Serial interface COMM1"

Parameter group 50 "Serial interface COMM2"

Not all parameters appear in all operating modes.

All of the parameters in this group can be called up directly.

31, 51 Output operating modes

0 = no serial interface

1 = METTLER TOLEDO continuous mode

2 = demand mode

3 = <ENQ> continuous mode

4 = METTLER TOLEDO short continuous mode

5 = host mode (for COMM1, parameter 31 only)

6 = SICS level 0 mode (for COMM1, parameter 31 only)

32, 52 ASCII remote input mode

It is possible for an interface to receive and execute commands while the other interface is receiving a print command in this operating mode. This mode must be activated in <ENQ> continuous mode and for Z, T, P and C inputs.

0 = off

1 = on

33, 53 Baud rate

300

1200

2400

4800

9600

34, 54 Parity bit

0 = 0

1 = odd

2 = even

3 = 1

4 = no parity bit

35, 55 Number of data bits

0 = 7 bits

1 = 8 bits

36, 56 Checksum

0 = no check byte

1 = check byte will be transferred

37, 57 Print net weight with positive sign

These parameters only appear if demand mode has been selected.

This function also enables printout of the net weight with a positive sign if the tare weight > the gross weight.

***0 = print net weight normally**

1 = display net weight normally but print with positive sign

2 = display and print net weight with positive sign

38, 58 STX

These parameters only appear if demand mode has been selected.

0 = no STX transfer

1 = transfer STX as the first byte of the data to be printed

39, 59 Line format when printing

These parameters only appear if demand mode has been selected.

0 = one line

1 = several lines

41, 61 Data fields for printout

These parameters only appear if demand mode has been selected.

[uvwxyz] appears in the display, each letter represents one of the six field that can be selected for printout.

0 = field off

1 = displayed weight

2 = gross weight

3 = tare weight

4 = net weight

5 = weighing system identification number

6 = empty line

7 = date/time

8 = characteristics memory

Factory setting: **523400** = printout of weighing system identification number, gross weight, tare weight, net weight

42, 62 Print with higher resolution

These parameters only appear if demand mode has been selected.

0 = print with normal resolution

1 = print with higher resolution

43, 63 Print weight unit

These parameters only appear if demand mode has been selected.

Only possible if the weighing system has been calibrated in kg or lb

0 = do not print weight unit

***1 = print weight unit kg/lb**

44, 64 Print the time

These parameters only appear if demand mode has been selected.

0 = 24-hour format

1 = 12-hour format (AM/PM)

45 Link, COMM1 only

This parameter only appears if host mode has been selected.

If several weighing terminals are used in the same application, they can either be addressed by the control computer directly or in series, one after the other.

0 = address each ID3sTx directly

1 = address all ID3sTx in series

5.5.6 Parameter group 70 "Country-specific settings"

Parameters 71 to 79 are called up, one after the other.

All of the parameters in this group can be called up directly.

71 Unit switchover**Requirements**

- The weighing system must have been calibrated in kg or lb.
- No load may be acting on the weighing platform when activating this function.

*0 = Unit key inactive

***1 = Unit key switches between kg and lb**

2 = Unit key switches between calibrated unit and user-defined unit

Example Switching between kg and g is possible if g has been configured as the user-defined unit.

The following settings must be made for this:

- Parameter 71 = 2 user-defined unit activated
- Parameter 72 = 0 calibration unit kg
- Parameter 92 = 0.001 position of the decimal point in conversion factor
kg -> g (1 / 0.001 = 1000)
- Parameter 93 = 0.001 conversion factor kg -> g
(1 / 0.001 = 1000)
- Parameter 94 = xxx number of digits for the user-defined unit

72 Weight unit at switch-on

Default settings	Options
<ul style="list-style-type: none"> • Calibration unit kg (parameter 01 = 1) or lb (parameter 01 = 0) • Switchover kg/lb (parameter 71 = 1) or no switchover (parameter 71 = 0) 	0 = kg 1 = lb
<ul style="list-style-type: none"> • Calibration unit kg (parameter 01 = 1) • Switchover kg/user-defined (parameter 71 = 2) 	0 = kg 1 = user-defined unit
<ul style="list-style-type: none"> • Calibration unit lb (parameter 01 = 0) and • Switchover lb/user-defined (parameter 71 = 2) 	0 = user-defined unit 1 = lb

73 Print weight value in brackets

This parameter only appears if demand mode has been selected.

0 = print normally

1 = print value in brackets

74 Tare symbol

This parameter only appears if demand mode has been selected.

0 = print T

***1 = print PT**

75 Decimal point/decimal comma

0 = display and print decimal point

1 = display and print decimal comma

76 Display zero (Z)

0 = Z off

***1 = display Z at ± 0.25 d of the gross zero value**

2 = display Z at gross or net zero

77 Tare autoclear following printout

0 = off

1 = on

78 Printout initiation

0 = printout every time the key is pressed

1 = only one printout possible for each weighing operation (when the weighing system is stationary)

2 = automatic printout (when the weighing system is stationary)

79 Excursion for triggering of automatic printout**0 = no excursion value defined**

1 = 10 d

2 = 100 d

3 = 500 d

(d = numerical increment on the display)

5.5.7 Parameter group 80 "Setpoint values"

All of the parameters in this group can be called up directly when setpoint mode is activated in parameter 81.

81 Setpoint mode**0 = off**

1 = 4 setpoints with after-flow compensation for 4 different filling operations

2 = 2 setpoints with coarse/fine flow switchover and after-flow compensation for 2 different filling operations

82 Tolerance 1

For 4 setpoints (parameter 81 = 1)	For 2 setpoints (parameter 81 = 2)
0 = Zero tolerance assigned to key 5 1 = Setpoint tolerance for setpoint 1	0 = Zero tolerance 1 = Setpoint 1

83 Tolerance 2

For 4 setpoints (parameter 81 = 1)	For 2 setpoints (parameter 81 = 2)
0 = Zero tolerance assigned to key 6 1 = Setpoint tolerance for setpoint 2	0 = Zero tolerance 1 = Setpoint 2

84 Setpoint status bit

0 = status bit switches from 0 to 1 in response to a positive weight signal

1 = status bit switches from 0 to 1 when absolute weight > setpoint value

5.5.8 Parameter group 90 "Miscellaneous"

Parameters 91 to 99 are called up, one after the other.

Parameter 91 can also be called up directly.

91 High resolution

***0 = normal resolution**

1 = high resolution

92 User-defined unit, position of decimal point in the conversion factor

The display indicates: [0.0001].

The displayed value determines the position of the decimal point in the reciprocal of the conversion factor.

Use the 0 key to change the value and confirm by pressing the ENTER key.

Example Calibrated unit kg, user-defined unit g

Conversion factor kg -> g: 1000

→ Change value to 0.001 and confirm by pressing the ENTER key.

93 User-defined unit, conversion factor

The display indicates: [XXXXXX].

Enter the reciprocal of the conversion factor between the weight unit and the user-defined unit.

0 = no user-defined unit

Example Calibrated unit kg, user-defined unit g

Conversion factor kg -> g: 1000

→ Enter value 0.001 and confirm by pressing the ENTER key.

94 User-defined unit, position of decimal point in the display

The displayed weight values are rounded up or down according to the selected position of the decimal point.

The display indicates: [0.0001].

The following are possible:

0.0001

0.001

0.01

0.1

1

95 Activate Input Board function

When this function is activated, the parameters 50 – 64 are not available, and parameter 96 is automatically deactivated.

0 = Input Board function not active

1 = Input Board function active

96 External control of weighing terminal

With this parameter a basic function of the weighing terminal can be controlled externally, e.g. with a foot switch. The option 0917-0272 is required for this purpose.

When this function is activated, the parameters 50 – 64 are not available, and parameter 95 is automatically deactivated.

0 = External control not active

1 = Taring

2 = Zero setting

3 = Printing

99 Restore factory settings for parameters

0 = selected setting are active

1 = restore US factory settings

2 = restore European factory settings

Procedure

1. Press key 1 or 2; [SUR] appears on the display.
2. Press key 1 or 2 again. [Ld Epr] appears on the display while the factory settings are being restored.

5.6 Calibration

→ In Setup mode, call parameter 08 and select 1. This starts the calibration procedure.

5.6.1 Determining the zero point

1. [E SCL] appears on the display: remove any load acting on the weighing platform.
2. Press any key to calibrate the zero point.

The display counts backwards from [16 CAL] to [01 CAL]. The previous zero value is overwritten.

5.6.2 Calibration without linearity compensation

1. [Add Ld] appears on the display. Apply the maximum load.
2. Enter the weight value in numbers and confirm by pressing the ENTER key.

When calibrating the maximum load, the display counts backwards from [16 CAL] to [01 CAL]. [CAL d] then appears on the display. The calibration procedure is terminated and the display changes to [--].

5.6.3 Calibration with linearity compensation

1. [Add FL] appears on the display. Apply the maximum load.
2. Enter the weight value in numbers and confirm by pressing the ENTER key.

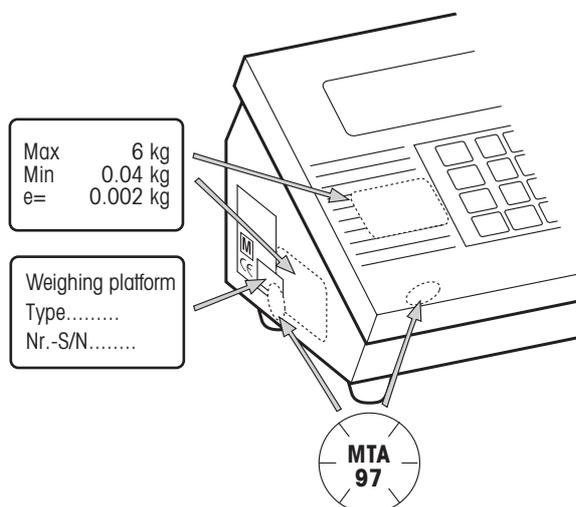
When calibrating the maximum load, the display counts backwards from [16 CAL] to [01 CAL]. [CAL d] then appears on the display.

3. [Add LQ] appears on the display. Apply half of the maximum load.
4. Enter the weight value in numbers and confirm by pressing the ENTER key.

When calibrating half of the maximum load, the display counts backwards from [16 CAL] to [01 CAL]. [CAL d] then appears on the display. The calibration procedure is terminated and the display changes to [--].

5.7 Labels on the weighing terminal and sealing

The following labels must be applied to the ID3sTx weighing terminal in order to identify the weighing system:



Measuring data label for the connected weighing platform

- on the front panel
- next to the rating plate

Rating plate for the connected weighing platform

- above the ID3sTx rating plate and the measuring data label for the weighing platform

Sealing with a push-on seal (when used for operations that are subject to calibration requirements only)

- over one of the front clips
- over the rating plate and measuring data label for the connected weighing platform

5.8 Determining the measuring data for the weighing platform

It is only necessary to determine the measuring data for the weighing platform under the following conditions

- when special-purpose weighing platforms, comprising METTLER TOLEDO system modules are connected to the ID3sTx weighing terminal,
- when weighing platforms manufactured by other companies are used.

5.8.1 Determining the required carrying load for the weighing cell

The required carrying load for each weighing cell E_{\min} is calculated according to the following formula:

$$E_{\min} = \frac{\text{Max} + E_0 + \frac{\text{Max} \times E_N}{100}}{N}$$

Max Weighing range in kg

N Number of weighing cells

E_0 Tare weight of carrier, container etc. in kg

E_N Zeroing range (4 %) + resetting range (20 %) = 24 %

E_{\min} Required carrying load for each load corner

Example Selection of the ring load cells to be used with a container weighing system with the following requirements:

Max 6000 kg weighing range

N 4 load corners

E_0 1500 kg tare weight

E_N 24 % zeroing and resetting range

$$E_{\min} = \frac{6000\text{kg} + 1500\text{kg} + \frac{6000\text{kg} \times 24\%}{100}}{4} = 2235\text{kg}$$

The required carrying load of 2235 kg can be achieved with ring load cell RLC 3.5 t with load corners.

5.8.2 Determining the sensitivity for each calibrated value

The ID3sTx weighing terminal requires a minimum sensitivity per calibrated value U_{\min}/e of $0.32 \mu\text{V}/e$ when used for operations that are subject to calibration requirements.

U_{\min}/e is calculated according to the following formula:

$$\frac{U_{\min}}{e} = \frac{U_e \times S \times \text{Max} \times 1000}{n \times E \times N}$$

U_e	Terminal power supply
S	Measuring cell output signal in mV/V
n	Resolution in e
Max	Weighing range in kg
E	Carrying load of the selected cell in kg
N	Number of load corners
U_{\min}	Minimum voltage per calibrated value in μV

Example Calculation of U_{\min}/e for the load corners selected above:

Max	6000 kg weighing range
N	4 load corners
U_e	1.6 V DC
S	2 mV/V
n	3000 e
E	3500 kg carrying load of the cell

$$\frac{U_{\min}}{e} = \frac{1,6\text{V} \times 2\text{mV}/\text{V} \times 6000\text{kg} \times 1000}{3000\text{e} \times 3500\text{kg} \times 4} = \frac{0,457\mu\text{V}}{e} > \frac{0,32\mu\text{V}}{e}$$

The calculated minimum voltage for each calibrated value is well above the required value. This means that the weighing equipment concerned can be used in conjunction with the ID3sTx weighing terminal for operations that are subject to calibration requirements.

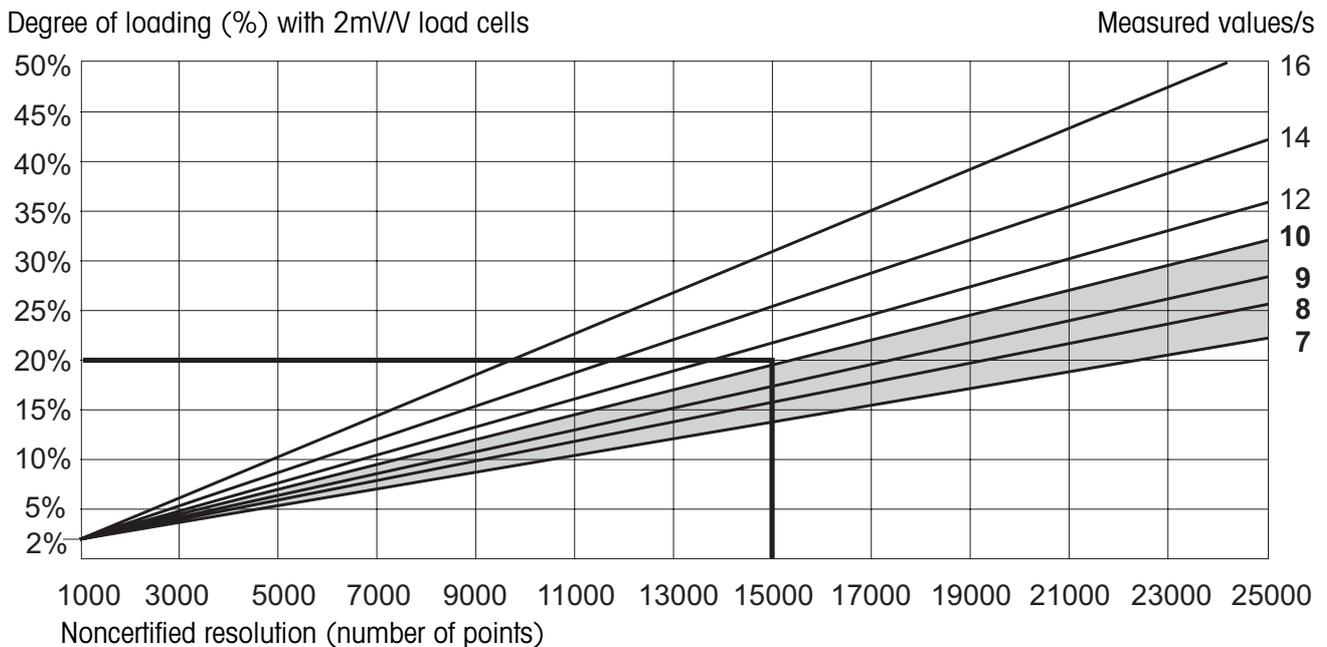
5.8.3 Simple determination of noncertified configurations

With the help of the configuration graph you can determine the configuration possibilities of the ID3sTx in dependence on the resolution, update rate and loading of the weighing cell(s) without a great deal of computation.

Permissible resolutions: 1,000 - 25,000 points

Example Determination for a tank scale with a load capacity of 6,000 kg

Design	4 ring load cells with an individual load capacity of 3.5 t each
Nominal load of all load cells	4 x 3.5 t = 15 t
Max. load	3,000 kg
Degree of loading of load cells	3,000 kg / 15,000 kg = 20 %
Increment size	200 g
Resolution	3,000 kg / 0.2 kg = 15,000 points, not certified



All measured value rates below the point of intersection of the degree of loading (20 %) and resolution (15,000 points) are permissible.

As a result, update rates of 7, 8, 9 or 10 measured values/s can be configured in the set-up mode in our example.

6 Using the data interfaces

The two optional data interfaces can be used in one of the following operating modes, independent of one another. The settings required on the terminal side are made in Setup mode.

6.1 METTLER TOLEDO (short) continuous modes

These operating modes are suitable for the continuous transfer of data to METTLER TOLEDO equipment, e.g. to a second display, to a setpoint controller, or to Analog Output modules in real time.

Data is also transferred when the weighing system is not stationary and when the gross weight = 0.

Continuous mode

Net and tare weights are transferred continuously.

Short continuous mode

Only net values are transferred continuously.

Output format

Weight values are always transferred in the following format:

STX	SB1	SB2	SB3	DF1	DF2	CR	CHK
-----	-----	-----	-----	-----	-----	----	-----

Legend

STX hex 02, ASCII character for "start of text"

is required for some printers, can be deactivated in Setup.

SB... Status bytes

DF1 Data field with 6 digits for the weight value,
transferred without decimal point or unit

DF2 Data field with 6 digits for the tare weight,
not transferred in short continuous mode

CR Carriage return (hex 0D)

CHK Checksum (two's complement of the binary sum of the 7 lower bits of all
previously transmitted characters, including STX and CR).

Status byte table

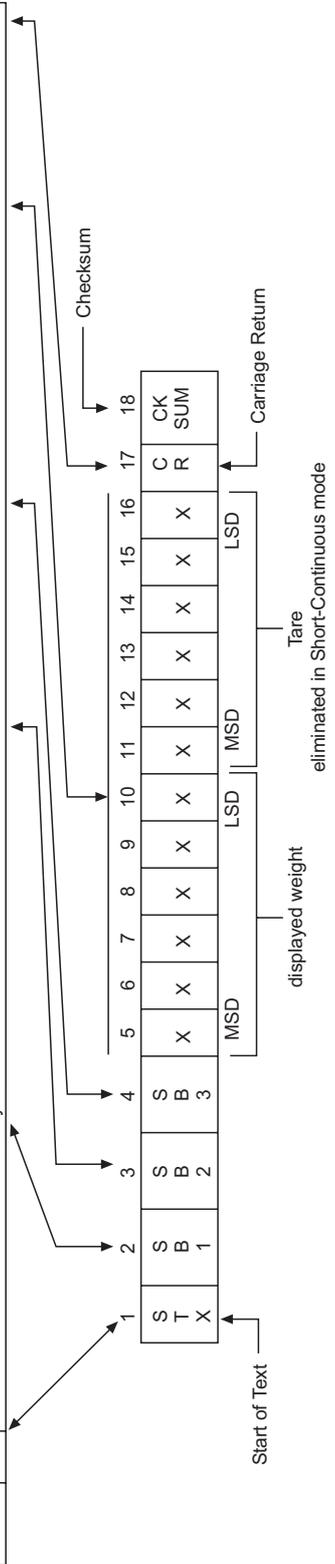
Setpoint mode off

Hex	Bit	Status byte 1										Status byte 2		Status byte 3			
		S	T	X	X	1	.X	.XX	.XXX	.XXXX	.XXXXX	lb kg	g	t	User-defined unit		
1	0	0	0	0	1	0	1	0	1	0	1		Net=1	0	1	0	1
2	1	1	0	0	1	1	0	0	1	1		Negative value=1	0	0	1	1	
4	2	0	0	0	0	1	1	1	1	1		Overload=1, Normal=0	0	0	1	1	
8	3	0					X1=1	X2=0	X5=1			Motion=1, Standstill=0		Print=1			
10	4	0					X1=0	X2=1	X5=1			lb=0, kg=1		High resolution=1			
20	5	0					always 1					always 1		always 1			
40	6	0					always 0					Switch on=1		see remark			
80	7						Parity bit										

Remark
 This bit is set when
 - switch-on unit kg
 - unit switchover off
 - tare specification active

Setpoint mode on

Hex	Bit	Status byte 1										Status byte 2		Status byte 3		Numerical value 0 - 9 and blank space												
		S	T	X	X	1	.X	.XX	.XXX	.XXXX	.XXXXX	lb kg	g	t	User-defined unit	S	0	1	2	3	4	5	6	7	8	9	CR	
1	0	0	0	0	1	0	1	0	1	0	1		Net=1	0	1	0	1	0	0	1	0	1	0	1	0	1	0	1
2	1	1	0	0	1	1	0	0	1	1		Negative value=1	0	0	1	1	0	0	1	0	1	0	1	0	1	0	0	
4	2	0	0	0	0	1	1	1	1	1		Overload=1, Normal=0	0	0	1	1	0	0	0	0	1	1	1	1	1	0	0	
8	3	0					SP1 dosing=0					Motion=1, Standstill=0		Print=1			0	0	0	0	0	0	0	0	0	1	1	
10	4	0					SP2 dosing=0					lb=0, kg=1		SW4 dosing=0		always 1	0										0	
20	5	0					always 1					always 1		always 1			1										0	
40	6	0					SP3 dosing or coarse flow=0					SP1 in tolerance =0		SP2 in tolerance=0			0										0	
80	7						Parity bit																					



6.2 Demand mode

This operating mode is suitable for the transfer of data to a printer.

Transfer commences as soon as a print command is received, e.g. when the PRINT key is pressed.

Data is only transferred when the weighing system is at rest and when the gross weight is $\neq 0$ in demand mode.

Data records of **up to 6 fields** can be transferred in demand mode. Data record configuration and printout takes place in Setup mode.

Output format

Data records are transferred in the following formats:

in a single line:

STX	DF1	UF1	DF2	UF2	...	DF6	UF6	CR	CHK	LF
-----	-----	-----	-----	-----	-----	-----	-----	----	-----	----

in several lines:

STX	DF1	UF1	CR	CHK	LF
STX	DF2	UF2	CR	CHK	LF

⋮

STX	DF6	UF6	CR	CHK	LF
-----	-----	-----	----	-----	----

Legend

STX hex 02, ASCII character for "start of text"

is required for some printers, can be deactivated in Setup.

DF1 ... 6 Weight field, data field with 8 characters for the weight value. The first character is blank for positive values and – for negative values.

This is followed by 7 characters for the actual weight, 1 of which being the decimal point.

If the value is transferred without a decimal point, it is prefixed by a blank.

The data field for broad printing is prefixed by the ASCII character SO (hex 0E) and the associated unit field is suffixed by the ASCII character SI (hex 0F).

When printing in brackets, a measured weight is framed by:< >, unlike a value entered by hand.

UF1 ... 6 Unit field, which can contain the following units:

Gross weight: lb, kg, g, t; Net weight: lbN, kgN, gN, tN,

Tare weight: lbT/lbPT, kgT/kgPT, gT/gPT, tT/tPT.

Can be deactivated in Setup.

CR Carriage return (hex 0D)

CHK Checksum (two's complement of the binary sum of the 7 lower bits of all previously transmitted characters, including STX and CR).

LF Line feed (hex 0A)

Other possible data fields (DF):

Weighing system number:

Data field with 8 characters, 5 of which = SCALE, 1 space, 2 characters for the weighing system number

Date and time:

Data field with 17 characters, 8 of which in the selected date format, 1 space, 2 characters for the hours, 1 character for a colon, 2 characters for the minutes, 1 space, 2 characters to enter AM/PM

Characteristics memory:

Data field with 14 characters, 6 of which are spaces, 1 character for #, 1 space, 6 characters for the ID number of the characteristics memory

Empty field: Data field with 7 spaces

6.3 <ENQ> continuous mode

A computer can call weight data from the weighing terminal in <ENQ> continuous mode.

ASCII command <ENQ> (= hex 05) initiates the transfer of a continuous mode data record.

Output format

As for continuous mode.

6.4 ASCII input mode

Some weighing terminal functions can be controlled by an external computer in ASCII input mode as long as demand mode or one of the continuous modes has been programmed for data output.

The interfaces recognize the following ASCII characters in upper-case letters:

- C = CLEAR key
- P = PRINT key
- T = TARE key
- Z = ZERO key

It is not necessary to define the command with CR (carriage return) and LF (line feed).

Note

Each command needs approx. 2 update intervals in the terminal. While a command is being processed, all other incoming commands are ignored.

- Wait for two update intervals between two commands.
(refer to section 5.5.2 for information concerning update intervals).

6.5 Host mode (COMM1 only)

The weighing terminal can be controlled from a computer in host mode. This applies to operator control of the terminal and to data transfer.

Star configuration Every terminal connected to the host is linked to it via a separate interface.

Loop configuration Low-cost alternative means of connecting several terminals to one host computer interface.

Requirements

- The loop configuration can only be realized via interface 1.
- Each terminal must have its own weighing system identification number to ensure that it can be addressed directly.
- The maximum length of cable between two terminals must not exceed 300 m.

6.5.1 Command format

Commands and responses are data strings of a permanently defined format. Commands sent to the weighing system comprise one or more ASCII characters.

Prefix	Command	Delimiter
<STX><ID>		<ETB><LRC><CR>

Legend

- STX hex 02, ASCII character for "start of text"
is required for some printers, can be deactivated in Setup.
- ID Terminal address
- ETB hex 17
- LCR Check symbol generated as the exclusive OR operation for all previously transferred characters. The terminal always transmits LCR, but can be deactivated in Setup mode for reception.
- CR Carriage return (hex 0D)

6.5.2 Response format

The commands received by the weighing system via the data interface are acknowledged by the weighing system in a response data record.

Prefix	Acknowledgment	Response	Delimiter
<STX><ID>	<ACK> or <NAK>	Not mandatory	<ETB><LRC><CR>

Legend

ACK Command executed

NAK Error message indicating correct ID, but incorrect LCR, command or command parameter

Refer to Section 6.5.1 for STX, ID, ETB, LCR, CR.

The following description does not refer to the prefixes, delimiters or the acknowledgment part of the response in detail. It merely refers to the commands and, where applicable, the responses.

6.5.3 Commands and responses

Overview

<D> Interrogating and entering the date

<F> Interrogating and entering the time

<T> Taring

<K> Specifying the tare weight

<Z> Zeroing

<P> Printing

<S> Interrogating and entering setpoint values

<M> Unit switchover

<W> Interrogating weight values

<L> Locking the keypad

<I> Interrogating the weighing system identification number

 Storing unit, tare weight, zero value and weighing system identification

<C> Interrogating Setup status

<Q> Interrogating status values

Interrogating the date

Command	<D>
Response	<Date> Date: ASCII characters, format as programmed in Setup

Entering the date

Command	<D><Date><I> Date: ASCII characters, format as programmed in Setup
---------	---

Interrogating the time

Command	<F>	
Response	<Time>	Time: ASCII characters, format HHMMX, HH = 00 ... 12, MM = 00 ... 59, X = 1 = PM, X = 2 = AM

Entering the time

Command	<F><Time><1>	Time: ASCII characters, format HHMMX, HH = 00 ... 12, MM = 00 ... 59, X = 1 = PM, X = 2 = AM
---------	--------------	--

Taring

Command	<T>	
---------	-----	--

Specifying the tare weight

Command	<K><Tare weight>	Tare weight: 8 ASCII characters incl. decimal point, enter the tare weight with leading zeros, where applicable. The weighing terminal adjusts the position of the decimal point and rounds up or down automatically.
---------	------------------	---

Zeroing

Command	<Z>	
---------	-----	--

Printing

Command	<P>	
---------	-----	--

Interrogating setpoint values

Command	<S><#><,>	#: Setpoint number
Response	<Setpoint>	Setpoint value: 8 ASCII characters incl. decimal point, with leading zeros, where applicable.

Entering setpoint values

Command	<p><S><#><,><Setpoint> #: Setpoint number: 0 = Setpoint 1 1 = Setpoint 2 2 = Setpoint 3 3 = Setpoint 4 4 = Setpoint 1 (after-flow compensation)/ (coarse/fine changeover) 5 = Setpoint 2 (after-flow compensation)/ (coarse/fine changeover) 6 = Setpoint 3 or Setpoint 1 (after-flow compensation) 7 = Setpoint 4 or Setpoint 2 (after-flow compensation) 8 = Tolerance 1 zero/Setpoint 1 9 = Tolerance 2 zero/Setpoint 2</p>	<p>Setpoint: 8 ASCII characters incl. decimal point, enter leading zeros, where applicable, the position of the deci- mal point is adjusted by the weigh- ing terminal The rounding up or down of the set- point value must be in accordance with the rounding up or down pro- grammed in the terminal.</p>
---------	---	--

Unit switchover

Command	<p><M><0> Switch over to lb <M><1> Switch over to kg/user-defined unit</p>
---------	---

Interrogating weight values

Command	<p><W><0> Net weight <W><1> Gross weight <W><2> Tare weight <W><3> Displayed weight</p>				
Response	<table border="0"> <tr> <td style="vertical-align: top;"> <p><Type> <Unit> <Weight value></p> </td> <td style="vertical-align: top;"> <p>Type: G = Gross T = Tare N = Net O = Overload H = Tare preset U = Underload</p> </td> <td style="vertical-align: top;"> <p>Unit: L = pounds K = kilograms A = user-defined unit G = grams T = ton</p> </td> <td style="vertical-align: top;"> <p>Weight value: 8 characters, with decimal point, leading zeros dis- played as spaces</p> </td> </tr> </table>	<p><Type> <Unit> <Weight value></p>	<p>Type: G = Gross T = Tare N = Net O = Overload H = Tare preset U = Underload</p>	<p>Unit: L = pounds K = kilograms A = user-defined unit G = grams T = ton</p>	<p>Weight value: 8 characters, with decimal point, leading zeros dis- played as spaces</p>
<p><Type> <Unit> <Weight value></p>	<p>Type: G = Gross T = Tare N = Net O = Overload H = Tare preset U = Underload</p>	<p>Unit: L = pounds K = kilograms A = user-defined unit G = grams T = ton</p>	<p>Weight value: 8 characters, with decimal point, leading zeros dis- played as spaces</p>		

Locking the keypad

Command	<p><L><0> Release the keypad <L><1> Lock the keypad</p>
---------	--

Interrogating the ID number in the characteristics memory

Command	<I>	
Response	<ID number>	ID number: 6 ASCII characters between 0 and 9 and 20h (space)

Entering an ID number into the characteristics memory

Command	<I><ID number>	ID number: 6 ASCII characters between 0 and 9 and 20h (space)
---------	----------------	--

Storing unit, tare weight, zero value and ID number

Command	
---------	-----

Interrogating Setup status

Command	<C><##>	##: 2 ASCII characters = number of the Setup parameter
Response	<Status value>	Status value: 8 ASCII characters = current parameter value

Interrogating status values

Command	<Q>	
Response	<S1><S2><S3><S4><S5><S6>	S1...S6 = Status bytes
	<p>Meanings of the status bytes</p> <p>The only bits given here are those which provide information about a status. The others are always set to state 0. Bit 7 is always the parity bit.</p>	
	<p>Status byte 1</p> <p>Bit 2 1 0 = Position of the decimal point</p> <p>0 0 0 = xxxx00</p> <p>0 0 1 = xxxxx0</p> <p>0 1 0 = xxxxxx</p> <p>0 1 1 = xxxxx.x</p> <p>1 0 0 = xxxx.xx</p> <p>1 0 1 = xxx.xxx</p> <p>1 1 0 = xx.xxxx</p> <p>Bit 4 3 = Rounding</p> <p>0 1 = 1</p> <p>1 0 = 2</p> <p>1 1 = 5</p> <p>Bit 6 1 = Print demand</p>	<p>Status byte 2</p> <p>Bit 0 1 = Net</p> <p>0 = Gross</p> <p>Bit 1 1 = Pounds</p> <p>0 = Kilograms</p> <p>Bit 2 1 = User-defined unit active</p> <p>Bit 6 1 = Tare enabled</p> <p>0 = Tare disabled</p>
	<p>Status byte 3</p> <p>Bit 2 1 = Weighing system not at rest</p> <p>Bit 3 1 = Zero indication for gross/net</p> <p>Bit 5 1 = Overload</p> <p>Bit 6 1 = Unit switchover active</p>	<p>Status byte 4</p> <p>Bit 0 1 = Negative weight</p> <p>Bit 2 1 = Manual taring</p> <p>Bit 5 1 = Keypad locked</p> <p>Bit 6 1 = Higher resolution on</p>
	<p>Status byte 5 (Starting state)</p> <p>Bit 3 1 = ON state</p> <p>0 = Normal state</p> <p>Bit 4 1 = Setpoint mode on</p>	<p>Status byte 6</p> <p>Bit 0 0 = Setpoint 1, Fine flow on</p> <p>Bit 1 0 = Setpoint 2, Fine flow on</p> <p>Bit 2 0 = Setpoint 3/Setpoint 1, Coarse flow on</p> <p>Bit 3 0 = Setpoint 4/Setpoint 2, Coarse flow on</p> <p>Bit 4 0 = Setpoint 1/ Zero tolerance 1 Fine flow on</p> <p>Bit 5 0 = Setpoint 1/ Zero tolerance 1 Fine flow on</p>

6.6 SICS level 0 input/output commands (COMM1 only)

SICS level 0 commands enable operation of networked METTLER TOLEDO weighing terminals using the same application software.

6.6.1 Command format

Commands and responses are data strings of a permanently defined format.

Commands that are sent to the weighing system comprise one or several ASCII characters. The following rules must be observed:

- All commands must be entered in upper-case letters.
- The individual parameters in a command must be separated from one another, and from the command name itself, by a "_" (ASCII 32 dec.).
- Conclude each command string with "C_R L_F" (ASCII 13 dec., 10 dec.).
The characters "C_R L_F" are usually entered by pressing the Enter/Return key and are therefore not given explicitly in the table of commands.
- A command string must not contain more than 24 characters, including "C_R L_F".

Command format

Command	Delimiter
1 – 3 characters	C _R L _F

6.6.2 Response format

The weighing system acknowledges every command received via the data interface with a response. Formats are distinguished by the following criteria:

- Responses with weight values
- Responses without weight values

Example of the response format with weight value

Identification	–	Status	–	Weight value	–	Unit	Delimiter
1 ... 2 characters for specification of the command		1 character		10 characters, incl. sign		1 ... 3 characters	C _R L _F

6.6.3 Error messages

All error messages comprise 2 characters and the string delimiter C_R L_F.

Possible error messages:

- ES Syntax error
The weighing system has not recognized the received command.
- ET Transmission error
The weighing system has received a "garbled" command.
- EL Logical error
The weighing system cannot execute the command.

6.6.4 Commands

Overview

I1 Identification string 1, interrogate the type of command set
 I2 Identification string 2, interrogate the weighing system identification
 S Transmit the weight value at rest
 SI Transmit the weight value immediately
 SIR Transmit the weight value immediately and repeat
 T Tare
 Z Zero
 @ Reset

Tips for the programmer

Command and response

You can improve the reliability of your application software by evaluating the weighing system's response to a command issued by your program. The response acknowledges the fact that the weighing system has received the command.

Reset

When establishing a communication link between the weighing system and the system, you should always send a reset command to the weighing system to ensure that it has assumed a defined state. Erroneous characters may be received or transmitted when the weighing system or system is switched on or off.

I1 – Interrogating the type of command set

Command	I1	Transmit the code for the implemented command set
Response	I1_A_0_2.10	= SICS level 0, Version 2.10 (command set S, SI, SIR, T, Z, I1, I2, @)
	I1_I	Unable to execute command

I2 – Interrogating the weighing system identification

Command	I2	Transmit weighing system identification
Response	I2_A_text	Identification
	I1_I	Unable to execute command
Remark	<ul style="list-style-type: none"> The length of the "text" character string is determined by the type of weighing system 	
Example	Command: I2 Response: I2_A_"ID3sTx_1500.0_kg"	

S – Transmit the weight value at rest (Send)

SI – Transmit the weight value immediately (Send Immediately)

SIR – Transmit the weight value immediately and repeat (SI and Repeat)

Command	S	Send the current net weight value at rest
	SI	Send the current net weight value irrespective of whether the weighing system is at rest or not
	SIR	Send the current net weight value repeatedly irrespective of whether the weighing system is at rest or not
Response	S_S_weight value_unit	Current weight value at rest in the first unit
	S_D_weight value_unit	(Dynamic) weight value not at rest in the first unit (Commands SI and SIR only)
	S_I	Unable to execute command, weighing system currently executing another command (e.g. taring or timeout, not at rest)
	S_-	Weighing system in the underload range
	S_+	Weighing system in the overload range
Remarks	<ul style="list-style-type: none"> The duration of the timeout is determined by the type of weighing system. The first unit is the weight unit displayed at switch-on. The last weight value (static or dynamic) prior to receiving the SI command is sent. SIR is overwritten (canceled) by the S, SI and @ commands. 	
Example	Command: SIR Response: S_D_ _ _ _ _12.07_kg; S_D_ _ _ _ _12.08_kg; S_S_ _ _ _ _12.08_kg	The weighing system transmits dynamic (status D) or stationary (status S) weight values repeatedly.

T – Taring (Tare)

Command	T	Taring, i.e. storing the next weight value recorded at rest as the new tare value.
Response	T_S_weight value_unit T_I T_+ T_-	Taring executed, i.e. stationary criterion and taring range observed. The new tare value corresponds to the change in the weight acting on the weighing system since the last zeroing operation. Unable to execute tare command as the weighing system is currently executing another command (e.g. zeroing or timeout, not at rest) Upper-limit violation of the taring range Lower-limit violation of the taring range
Remarks	<ul style="list-style-type: none"> • The value in the tare memory is overwritten by the next value. • The duration of the timeout is determined by the type of weighing system. • The first unit is the weight unit displayed at switch-on. 	
Example	Command: Response:	T T_S_100.00_kg The weighing system has been tared, the value 100.00 kg has been stored in the tare memory.

Z – Zeroing (Zero)

Command	Z	Zeroing the weighing system
Response	Z_A Z_I Z_+ Z_-	Zeroing executed, i.e. stationary criterion and zeroing range observed. According to this: gross = net = tare = 0. Unable to execute the zeroing command as the weighing system is currently executing another command, e.g. taring or timeout and is therefore not at rest. Upper-limit violation of the zeroing range Lower-limit violation of the zeroing range
Remarks	<ul style="list-style-type: none"> • The tare memory is erased during a zeroing operation. • The zero point, which is determined at switch-on, is not influenced by this command, i.e. the measuring ranges remain unaffected. • The duration of the timeout is determined by the type of weighing system. 	
Example	Command: Z Response: Z_A Zeroing executed.	

@ – Reset

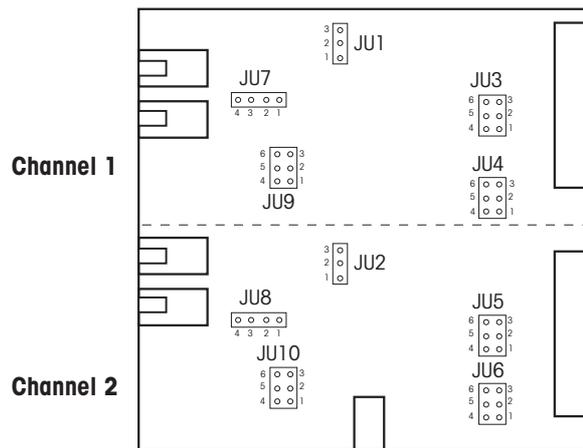
Command	@	Returns the weighing system to its state at switch-on without zeroing.
Response	I4_A_ "text"	Weighing system identification, the weighing system is ready for service.
Remarks	<ul style="list-style-type: none"> • The reset command is always executed. • All parameters that have been changed via the interface are reset. • Unanswered commands are erased. • The tare memory is reset to zero. • If the weighing terminal is on standby, this command switches it on. • If a reset command is received during the calibration and test phase, it will not be executed until the phase has terminated. 	
Example	Command: @ Response: I4_A_"0123456789" The weighing system has been reset and transmits its weighing system identification.	

6.7 Configuration of the interfaces on the Fiber Optic Converter

Each of the two channels of the Dual Channel Fiber Optic Converter can be used as a 20 mA CL interface or a RS232 interface. Jumpers must be set on the Dual Channel Fiber Optic Converter PCB in order to configure the interfaces.

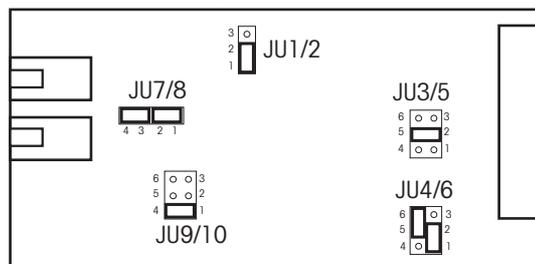
→ Undo the four Phillips screws in the Dual Channel Fiber Optic Converter enclosure and remove the cover.

Jumper positions for the two channels on the converter PCB

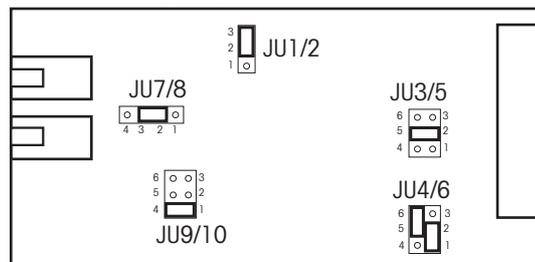


→ Set the jumper for channel 1 or channel 2 as shown in the diagram.

RS232, cable length max. 15 m



CL, cable length up to 30 m



→ Replace the cover and secure to the converter enclosure with the 4 screws. The 4 fixing straps can be fitted permanently, if required.

7 What to do if ...



EXPLOSION HAZARD

→ Always comply with the instructions for safety in Chapter 1 when working with the ID3sTx weighing terminal.

7.1 Error messages

Error message	Cause	Remedy
E1 ... E4	Internal error	→ Call METTLER TOLEDO Service.
E10	Setpoint mode activated in Setup but no setpoint values entered	→ Press the CLEAR key and enter setpoint values or deactivate setpoint mode in Setup.
E11	Power supply interrupted while sleep mode activated, e.g. OFF key pressed; zero point, tare value and weighing platform number lost	→ Press the CLEAR key and reenter values or deactivate sleep mode in Setup.
E16	Calibration values incorrect Error message E24 erased and calibration started	1. Press the CLEAR key and go to Setup. 2. Enter correct values in parameter 04.
	Conversion factor $\neq 0$ selected in parameter 93	1. Press the CLEAR key and go to Setup. 2. Set the conversion factor = 0 in parameter 93.
E21 (in Setup)	Maximum load incorrect	→ Press the CLEAR key and enter the permitted maximum load.
E26 (in Setup)	Maximum number of 25000 points exceeded	→ Press the CLEAR key and enter ≤ 25000 points.
E27 (in Setup)	Overload value entered incorrectly	→ Enter overload value \geq maximum load.
E32	Calibrating weight too light	→ Press the CLEAR key and apply additional calibrating weight.
	Wrong signal from the weighing platform	1. Check the weighing platform for mechanical faults. 2. Check the maximum load in Setup. 3. Call METTLER TOLEDO Service.

Error message	Cause	Remedy
E34	Calibrating weight too heavy	→ Press the CLEAR key and reduce the calibrating weight to < 105 % of the maximum load.
E35 (in Setup)	Calibrating weight entered incorrectly	1. Press the CLEAR key. 2. Recalibrate the weighing platform; the entered calibrating weight must be a multiple of the specified point size.
SP Err	Setpoint value incorrect	→ Enter an acceptable setpoint value.
EEE	Upper-limit violation of the tolerance for automatic zeroing when switching on and/or tare interlock activated	1. Remove the load from the weighing platform and reset to zero. 2. Recalibrate the weighing platform.
-EEE	Lower-limit violation of the tolerance for automatic zeroing when switching on, e.g. because load plate missing, and/or tare interlock activated	1. Increase weight to 0, e.g. apply load plate. 2. Recalibrate the weighing platform. 3. Increase the tolerance range for automatic zeroing when switching on (parameter 14).

7.2 Other errors

Error	Cause	Remedy
Terminal does not switch on	Terminal switched off or sleep mode active	→ Switch terminal on.
	Internal or external battery flat or defective	→ Connect up to another battery and recharge the flat battery.
	Connected equipment defective	→ Check or replace connected equipment.
	Internal error	→ Call METTLER TOLEDO Service.
Basic functions do not respond	Contradictory settings in Setup	→ Select Setup parameter 99 = 2 and confirm restoration of the factory settings.

Error	Cause	Remedy
Displayed information incorrect	Weighing platform not zeroed correctly	→ Remove the load, reset to zero and repeat the weighing operation.
	Tare value incorrect	→ Erase tare value and/or enter the correct tare value.
	Load plate / weighed article making contact with surrounding surface	→ Adjust until there is no contact.
	Weighing platform on a slant	→ Level the weighing platform.
Displayed information unstable	Disturbances at the installation location	→ Adjust vibration adapter.
	Draft	→ Eliminate draft.
	Load plate / weighed article making contact with surrounding surface	→ Adjust until there is no contact.
	Fault in the power supply	→ Call METTLER TOLEDO Service.
Display blocked	Internal error	→ Call METTLER TOLEDO Service.
Displayed information changes suddenly	Weighing platform cable moved or "dragging"	→ Reroute the weighing platform cable so that it is protected and reduce the possibility of movement to a minimum.
Display slow to respond	Weighing platform failure	→ Check weighing platform.
Keypad input impossible	Keypad defective	→ Call METTLER TOLEDO Service.
Weighing terminal does not work properly	Poor electrical contact	→ Call METTLER TOLEDO Service.
Terminal fails to calibrate	Initial load >2/3 cell capacity	→ Reduce the initial load to less than 2/3 of the cell capacity.
Wrong date/time	Power supply from internal battery interrupted for longer than 30 s	→ Set the date and time in Setup.

8 Cleaning and charging the battery

8.1 Safety instructions



EXPLOSION HAZARD

→ Always comply with the safety instructions in Chapter 1 when working with the ID3sTx weighing terminal.

8.2 Cleaning



RISK OF DAMAGING THE SURFACE

- Make sure that the enclosure cover and battery compartment cover are closed properly as the requirements of IP65 are not fulfilled if this is not the case.
- Never use aggressive cleaning agents.
- Never spray the cleaner directly onto the terminal.
- Use a clean, soft cloth and mild cleaning agent to wipe the keypad and the enclosure.

8.3 Charging the battery



EXPLOSION HAZARD

- Always charge the batteries in the safe zone.
- Only use METTLER TOLEDO battery chargers and only use these to charge METTLER TOLEDO battery packs.
- Only install and use METTLER TOLEDO battery chargers in the safe zone.

Notes

- **Never** fully discharge the battery unit (lead rechargeable)! No "memory" effect.
- When the battery symbol appears on the display, charge the battery as soon as possible. The battery then has sufficient capacity to run for approx. 8-10 h.
- When used continuously, a second battery pack should be available, so that this can be used while the original battery pack is being charged. Leave the other battery unit on the charger until used (float charging)!
- In the event of longer pauses (over several days), remove the battery unit and charge it until it is reused.
- Replace the battery pack after it has been recharged approx. 250 times.
- The battery compartment is located on the right-hand side of the ID3sTx enclosure.

Disposal

→ Dispose of used batteries properly!



8.3.1 Charging the internal battery

1. If sleep mode has been activated, switch the weighing terminal off with the FUNCTION and 9 keys or, if this is not the case, with the OFF key.
2. Use a screwdriver to undo the two screws and remove the cover from the battery compartment.
3. Remove the battery pack.
4. Insert another fully charged battery pack within 30 seconds to ensure that the date and time information is retained.
5. Replace the cover on the battery compartment and tighten the two screws.
6. Move the original battery pack to the safe zone and recharge with the METTLER TOLEDO charger.
7. Follow the operating instructions for the charger.

8.3.2 Charging the external battery



EXPLOSION HAZARD

→ Restore equipotential bonding after charging the external battery.

1. If sleep mode has been activated, switch the weighing terminal off with the FUNCTION and 9 keys or, if this is not the case, with the OFF key.
2. Release the bayonet lock on the battery.
3. Connect up another fully charged battery pack within 30 seconds to ensure that the date and time information is retained.
4. Plug the connector on the end of the battery cable into the socket in the battery pack. Press the two together carefully, turning at the same time, until the bayonet lock latches into place.
5. Turn the retainer on the cable clockwise to secure the joint.
6. Move the discharged battery pack to the safe zone and recharge with the METTLER TOLEDO charger.
7. Follow the operating instructions for the charger.

9 Technical data

9.1 General data

Enclosure Stainless steel enclosure

Type of protection: II 2 G EEx ib IIC T4
II 2 D IP65 T 50 °C

IP degree of protection: IP65

Display High-resolution LCD with 7-segment display, 6 digits

Characters 25 mm high

Weight displayed in kg, lb, g, t

Optional decimal point or comma

Symbols for Charge battery, Gross weight (G), Tare weight (T or PT), Net weight (Net) and Zero (Z)

Keypad Tactile feedback membrane keypad, 4 x 5 keys

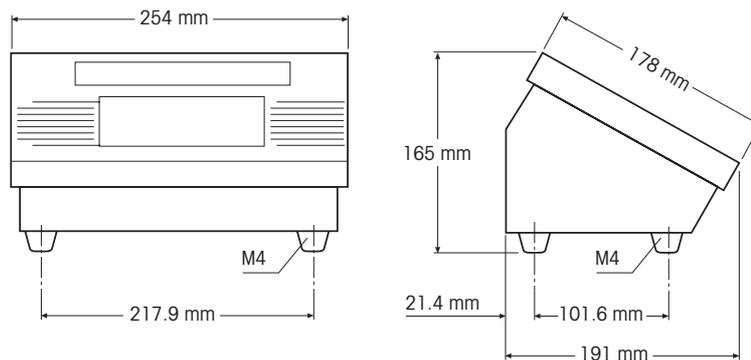
Operating temperature -10 °C ... +40 °C, relative humidity: 10 % ... 95 %

Storage temperature -18 °C ... +60 °C, relative humidity: 10 % ... 95 %

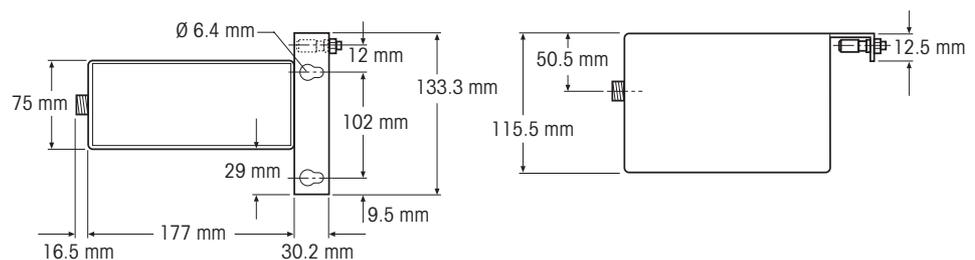
Weight With internal battery approx. 3.2 kg
For connection to the external battery approx. 3.1 kg
With internal power supply unit approx. 4.5 kg

Dimensions

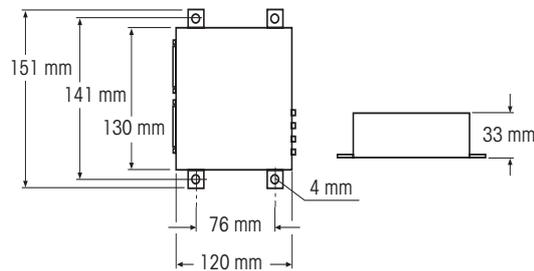
Terminal



External battery



Dual Channel Fiber Optic Converter



9.2 Electrical data

ID3sTx $U_i = 14.3 \text{ V}$; $I_i = 935 \text{ mA}$; $P_i = 3.3 \text{ W}$

Internal battery $U_0 = 13.6 \text{ V}$; $I_0 = 890 \text{ mA}$; $P_0 = 2.9 \text{ W}$
 1.2 AH; intrinsically safe
 Aluminium enclosure; weight approx. 0.97 kg
 Operating time approx. 25 – 55 h, determined by the update rate and the number of weighing cells and interfaces connected
 Charging time approx. 32 h
 Max. temperature while charging 30 °C, ideally less than 10 °C
 Recommended storage temperature: +5 °C – +25 °C

Type of protection: II 2 G EEx ib IIC T4

External battery $U_0 = 13.6 \text{ V}$; $I_0 = 895 \text{ mA}$; $P_0 = 3.0 \text{ W}$
 7 AH; intrinsically safe
 Stainless steel enclosure; weight approx. 4.3 kg; connected to the ID3sTx weighing terminal via a non-detachable cable
 Operating time approx. 200 – 350 h, determined by the update rate and the number of weighing cells and interfaces connected
 Charging time approx. 12 h
 Max. temperature while charging 30 °C, ideally less than 10 °C
 Recommended storage temperature: +5 °C – +25 °C

Type of protection: II 2 G EEx ib IIC T4
 II 2 D IP65 T 120 °C

Internal power supply unit $U_0 = 12.65 \text{ V}$; $I_0 = 888 \text{ mA}$; $P_0 = 2.8 \text{ W}$
 Input voltage: 230 V AC, output voltage: 11.8 – 14.0 V DC
 Typical short-circuit current: 213 mA

Type of protection: II 2 G EEx m e [ib] IIC T4

9.3 Functions

Print	When the key is pressed as long as the data interface is installed
Unit switchover	Switch between kg and lb or a user-defined unit by pressing the key
Zeroing	Automatic (at ± 2 % or ± 10 % of the weighing system's capacity) or manual (at ± 2 % or ± 20 % of the weighing system's capacity)
Tare compensation	By pressing the key or automatic
Tare recall	By pressing the key
Sleep mode	Switch-off time adjustable from 1 to 99 minutes
Power management	Automatic switch-off when the voltage drops below 11.1 V DC
Setpoints	4 setpoints with tolerances for 4 filling operations at one speed or 2 setpoints and tolerances for 2 filling operations with coarse and fine flow
Date/time	Date in European or US format, time in 24-hour format
Weighing system identification	6-digit
Update rate	Adjustable between 7 and 16 measurements per second
Standstill check	Adjustable in 5 stages
Display update	Adjustable between 0.25 and 2.4 seconds

9.4 Compatible weighing platforms

METTLER TOLEDO weighing platforms D..Tx, PTA459x, PUA579x, PBA430x, RWM1x

Weighing cells from other manufacturers Up to 4 weighing cells with 2mV/V, cell resistance 350 Ω
Weighing cells with 3 mV/V if the weighing range + preload < 2/3 nominal load of the bending rod
Use at least 39 % of the cell capacity for span
Connect weighing cells via the junction box

10 Accessories

10.1 Mechanical accessories

		Order No.
Wall mounting	To secure the ID3sTx weighing terminal to the wall, incl. fixing material, stainless steel throughout	00 504 130
Floor stand	For a free-standing installation of the ID3sTx weighing terminal, incl. fixing material to bolt the tripod to the floor, stainless steel throughout	00 504 132
Base	For mobile installation of the floor stand, stainless steel throughout	00 503 701
Trestle stand	To secure the ID3sTx weighing terminal to the trestle for KB or KC weighing platforms, stainless steel throughout	00 504 128
Scale stand	To secure the ID3sTx weighing terminal to DB30sTx/DB60sTx, stainless steel throughout	00 504 439
	To secure the ID3sTx weighing terminal to PBA430x weighing platforms	
	<ul style="list-style-type: none"> • Dimensions 240 x 300 mm and 300 x 400 mm Stand height 330 mm from load plate • Dimensions 400 x 500 mm and 500 x 650 mm Stand height 600 – 800 mm from load plate 	21 254 243 21 254 244
Retainer	To secure the ID3sTx weighing terminal to the shaft of a PTA459x weighing platform, complete	00 505 638
Battery holder	To secure the external battery to the shaft of a PTA459x weighing platform	00 505 640
	To secure the external battery to a trestle or floor stand	22 000 150

10.2 Power supply

		Order No.
Internal battery pack	12 V DC / 1.2 AH, rechargeable, intrinsically safe, Ex approval for zone 1	22 000 144
Battery charger for the internal battery pack	12 V DC / 1.2 AH, mains lead/plug with earthing contact (Europe)	22 000 145
	12 V DC / 1.2 AH, mains lead/plug GB	22 000 146
External battery pack	12 V DC / 7 AH, rechargeable, intrinsically safe, Ex approval for zones 1 and 21	22 000 147
Battery charger for the external battery pack	12 V DC / 7 AH, mains lead/plug with earthing contact (Europe)	22 000 148
	12 V DC / 7 AH, mains lead/plug GB	22 000 149
Power Supply 24 VDC	Power supply unit for zone 1, without power cable	22 000 164
Power Supply 110 VAC	Power supply unit for zone 1, without power cable	22 000 163

10.3 Data interfaces

		Order No.
Fiber-optic data I/O PCB	For installation in the ID3sTx, to connect peripheral equipment via the Dual Channel Fiber Optic Converter	22 000 175
Dual Channel Fiber Optic Converter	2 serial interfaces, programmable as RS232 or CL 20 mA	
	Dual Channel Fiber Optic Converter for Europe	22 000 143
	Dual Channel Fiber Optic Converter for GB	22 000 142
Input Board	For installation in ID3sTx, for connection of passive power electronic equipment, e.g. tilt switch	22 002 364
METTLER TOLEDO Fiber-optic cable	2 cables (transmit and receive), length between 1 m and 300 m, specify desired length when ordering Also order: End ferrules, see below	22 000 251
End ferrules	For fiber-optic cable	22 000 138

11 Appendix

11.1 Table of Geo values

Country		Geo value	Country		Geo value
A	Austria	19	MA	Morocco	13
AUS	Australia	12	MAL	Malaysia	5
B	Belgium	21	MEX	Mexico	5
BR	Brazil	8	N	Norway	24
CDN	Canada	18	NL	Netherlands	21
CH	Switzerland	18	NZ	New Zealand	16
CO	Columbia	2	P	Portugal	15
D	Germany	20	PE	Peru	6
DK	Denmark	23	PRC	China	10
E	Spain	15	RA	Argentina	13
EC	Ecuador	1	RCH	Chile	12
ET	Egypt	11	RI	Indonesia	6
F	France	19	ROC	Taiwan	10
GB	Great Britain	21	ROK	South Korea	15
GR	Greece	15	S	Sweden	24
HK	Hong Kong	9	SA	Saudi Arabia	8
I	Italy	17	SF	Finland	24
IL	Israel	12	SGP	Singapore	5
IND	India	8	T	Thailand	6
IR	Iran	12	TA	Turkey	16
IRL	Ireland	22	USA	United States	16
IS	Iceland	26	YUG	Yugoslavia	18
J	Japan	14	YV	Venezuela	5
JOR	Jordan	11	ZA	South Africa	12
KWT	Kuwait	11			



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