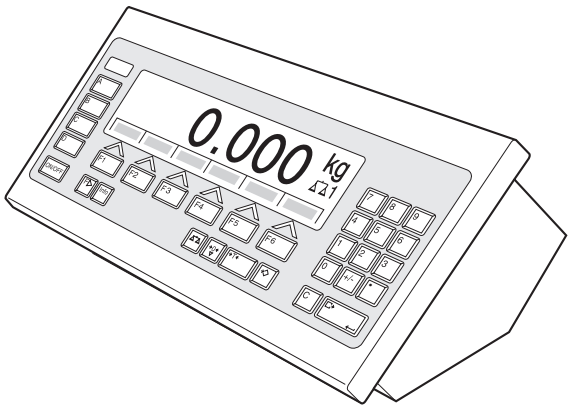
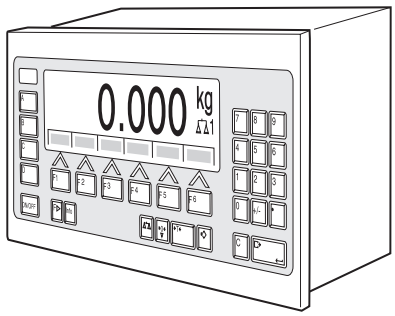
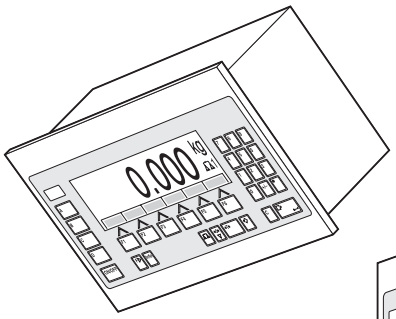
Service manual

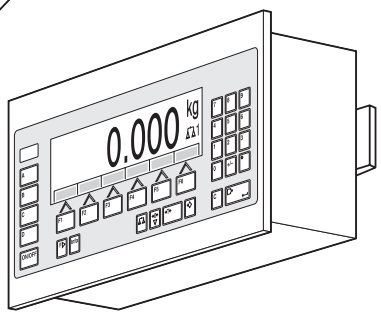
METTLER TOLEDO MultiRange
ID7 / ID7-2000 / ID7xx / ID7-24V
Weighing terminals

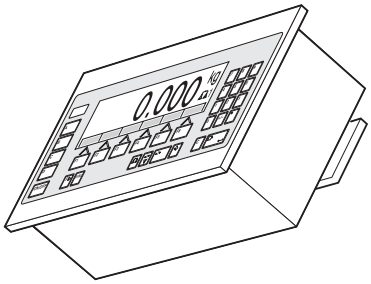
METTLER TOLEDO











Contents

1 About this service manual

1.1 General safety precautions

Always observe the following basic safety precautions when performing service work on the ID7 weighing terminals:

▲ Only replace parts or assemblies listed in the spare parts list.

▲ Do not conduct repairs on assemblies.

DANGER

Danger of shock when components on the power-supply unit board are touched.

➜ Deenergise the mains connection or power supply before commencing replacement and installation work on the ID7xx and ID7-24 V. For ID7 and ID7-2000, the power plug is to be pulled.

➜ Before checking, make sure that the power-supply unit cover is properly mounted.

➜ When the weighing terminal is connected to the mains supply, do not touch parts marked with the symbol at the left.

WARNING

Danger of explosion in the case of improper handling of the battery on the ID7 board.

➜ Do not replace battery.

➜ Only have boards provided with a battery disposed of by the manufacturer.

1.2 Versions of ID7 weighing terminal

Unit versions

This service manual contains all service and repair information for the METTLER TOLEDO ID7 weighing terminals with all models, applications and additional equipment:

- ID7 desk unit, wall unit, panel unit
- ID7-2000 desk unit, wall unit, panel unit
- ID7xx desk unit, wall unit, panel unit
- ID7-24V desk unit, wall unit, panel unit

Exploded views and spare parts lists

In the exploded views of the basic unit the ID7-2000 resp. ID7xx desk unit is shown. With the exception of a few differences, the design also applies to the other models. Model-specific parts are marked in these exploded views.
ID7xx and ID7-24V partially use different spare parts than ID7 and ID7-2000. Therefore, the exploded view and spare parts list for ID7xx are listed separately.
A higher construction is used for the wall and panel unit with device number 2477067 and up. This new construction contains a mounting plate for mounting the following interfaces: Analog Scale-ID7, Alibi Memory-ID7, Profibus-DP-ID7 and Ethernet-ID7.

Accessories

The ID7, ID7-2000, ID7xx and ID7-24V weighing terminals can already be equipped with a variety of accessories at the factory. In this case the customer-specific operating instructions and installation information contain any required adjustment information.
Accessory parts for retrofitting have separate operating instructions and installation information.

Update ID7 – ID7-2000

ID7-2000 offers expanded storage possibilities. This also requires changed hardware and software components. Therefore, observe the compatibility of hardware and software when replacing PCBs and software.
ID7xx is based on the technical version of ID7-2000. At the moment, no compatibilities have to be observed.

Compatibility of EPROM Pac application – ID7 memory module – ID7 PCB

	Memory module ID7 00507665/zz/..		**ID7 PCB 00507525/yy/..**	
EPROM Pac application	zz = 00	zz = 01	yy = 01	yy = 02
Software version 1.xx	x	x	x	x
Software version 2.xx (ID7-2000)	–	x	–	x

Compatibility of boot EPROM of ID7 PCB

Boot EPROM Printed on label: 22000396 IB07-0-0...	**ID7 PCB 00507525/yy/..**	
	yy = 01	yy = 02
Software version 1.xx 00507694	x	–
Software version 2.xx 22003816	–	x

yy, zz = Technical version of hardware, see yellow label on PCB

1.3 Combinations of optional equipment

ID7, ID7-2000, ID7-24V: desk unit
Max. 4 cards (Analog Scale-ID7, Ethernet-ID7, Profibus-DP-ID7 or Alibi Memory-ID7) can be installed in the ID7, ID7-2000 and ID7-24V desk units. The following combinations are possible:

Analog Scale-ID7 A2	Ethernet-ID7 A5	Profibus-DP-ID7 A6	Alibi Memory-ID7 A1
2	1	1	–
1	1	1	1

For the installation position, see page 6.

ID7, ID7-2000: wall and panel unit up to device number 2477066
Max. 3 cards (Analog Scale-ID7, Ethernet-ID7, Profibus-DP-ID7 or Alibi Memory-ID7) can be installed in the ID7 resp. ID7-2000. The following combinations are possible:

Analog Scale-ID7 A2	Ethernet-ID7 A5	Profibus-DP-ID7 A6	Alibi Memory-ID7 A1
2	1	–	–
2	–	1	–
1	1	–	1
1	–	1	1

For the installation position, see page 7.

ID7 / ID7-2000 / ID7-24V: wall and panel unit from device number 2477067
With device number 2477067 and up, there are no longer hardware limitations when interfaces are combined.
For the installation position, see page 7.

ID7xx
Max. 3 cards (Analog Scale-ID7, Ethernet-ID7, Profibus-DP-ID7 or Alibi Memory-ID7) can be installed in the ID7xx. The following combinations are possible:

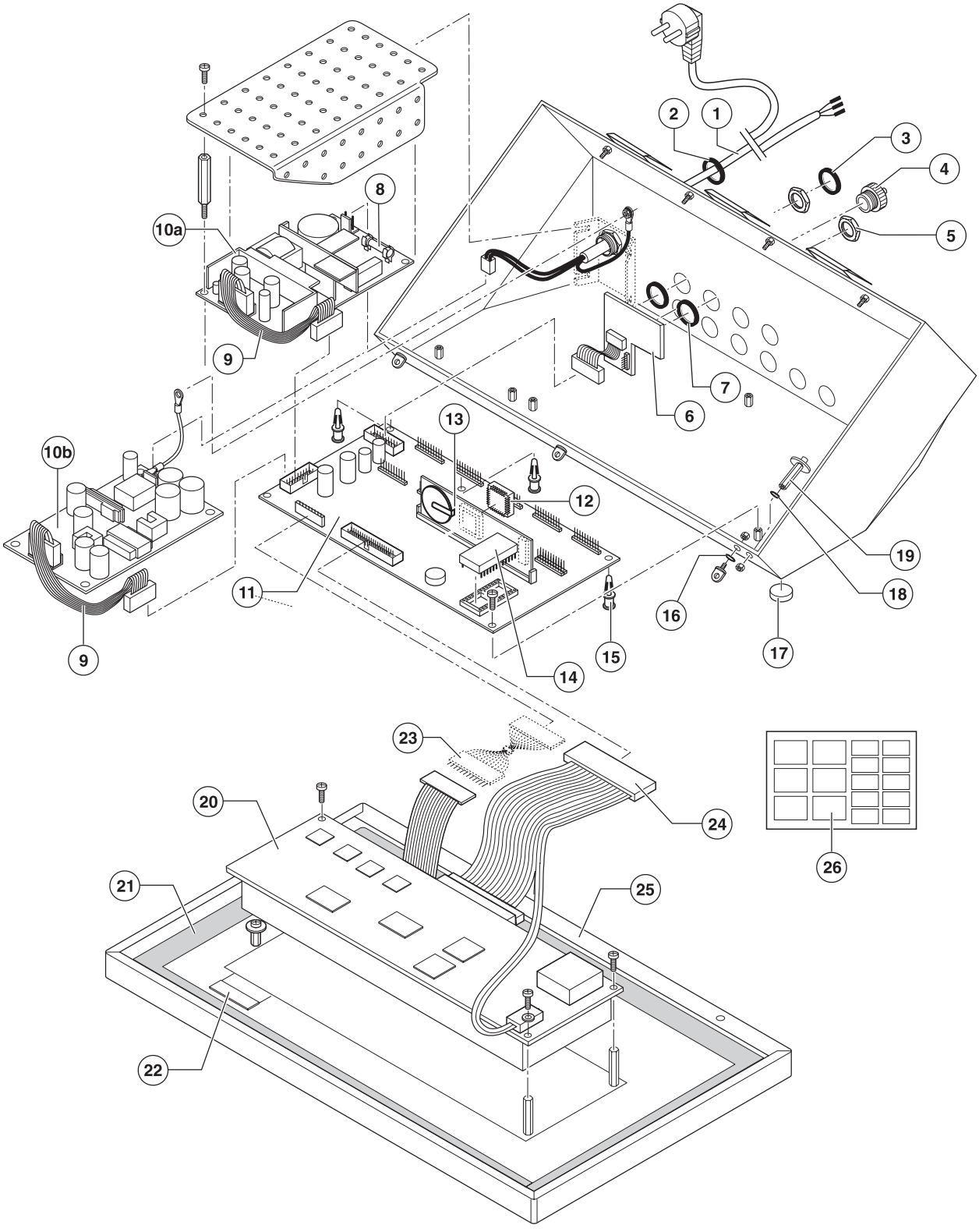
Analog Scale-ID7 A2	Ethernet-ID7 A5	Profibus-DP-ID7 A6	Alibi Memory-ID7 A1
2	1	–	–
2	–	1	–
1	1	–	1
1	–	1	1

For the installation position, see page 15/16.

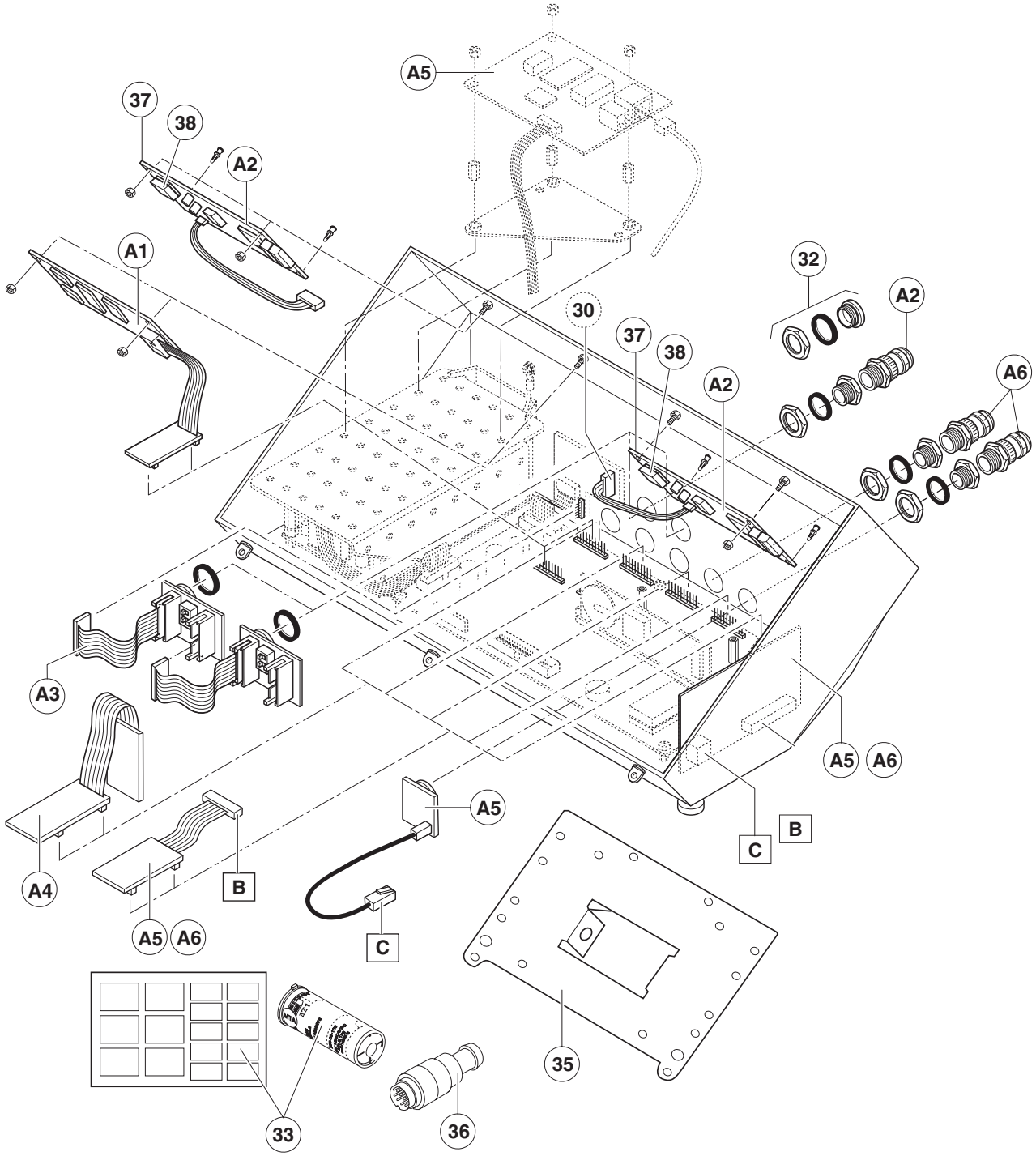
2 ID7 / ID7-2000 / ID7-24V

2.1 ID7 / ID7-2000 / ID7-24V exploded views

2.1.1 ID7 / ID7-2000 / ID7-24V basic equipment

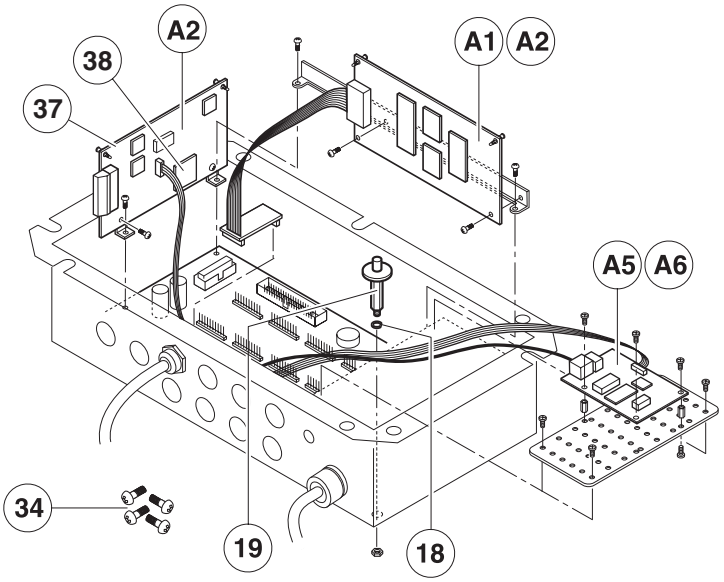


2.1.2 ID7 / ID7-2000/ ID7-24V desk unit optional equipment

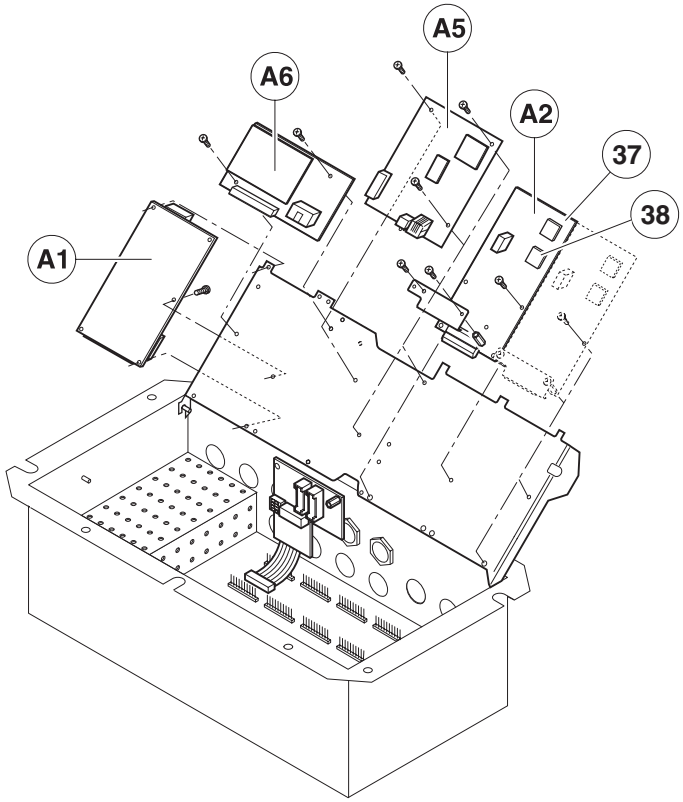


2.1.3 ID7 / ID7-2000/ ID7-24V wall/panel unit optional equipment

up to device number 2477066



from device number 2477067



2.2 ID7 / ID7-2000/ ID7-24V spare parts

Item	Designation	Order Number
1	Mains cable with plug for ID7 / ID7-2000	
	Euro	00 507 961
	GB	00 507 962
	USA	00 507 963
	CH	00 507 964
	DK	00 507 965
	ZA	22 001 095
	AUS	22 001 096
	Mains cable with open ends for ID7-24V	22 004 836
2	Sealing ring for power cable gland	00 209 911
3	Sealing ring for ID card	22 000 714
4	Dust protection cap	00 089 263
5	Hexagon nut, M18 x 0.75	00 507 940
6	ID7 socket board	00 507 668
7	O-ring, 16 x 1.25	00 203 656
8	Miniature fuse, F 2.5 A H for ID7 / ID7-2000 only	22 001 624
9	Power supply unit board cable	00 507 695
10a	Power supply unit LPT46 for ID7 / ID7-2000	22 000 360
10b	Power supply unit PSU-3043-1 for ID7-24V	22 006 793
11 *	ID7 board, without ID7 boot EPROM	00 507 525
12 *	ID7-2000 Pac application	
	EPROM with ID7-2000-Base software	22 004 100
	EPROM with ID7-2000-Count software	22 004 101
	EPROM with ID7-2000-Data software	22 004 102
	EPROM with ID7-2000-Form software	22 004 103
	EPROM with ID7-2000-Form-XP software	22 005 893
	EPROM with ID7-2000-Sum software	22 004 104
	EPROM with ID7-2000-Dos software	22 004 105
	EPROM with ID7-2000-Dos-R software	22 004 106
	EPROM with ID7-2000-Control software	22 004 107
	EPROM with ID7-2000-MC software	22 003 625
	EPROM with ID7-2000-Sys software	22 005 341

* When changing these parts observe the compatibility, see tables on page 3.

Item	Designation	Order Number
12 *	ID7 Pac application	
	EPROM with ID7-Base software	22 001 496
	EPROM with ID7-Count software	22 001 497
	EPROM with ID7-Data software	22 001 498
	EPROM with ID7-Form software	22 001 499
	EPROM with ID7-Sum software	22 001 500
	EPROM with ID7-Dos software	22 001 501
	EPROM with ID7-Dos-R software	22 001 502
	EPROM with ID7-Control software	22 001 503
13*	ID7 memory module (without EPROM)	00 507 665
14*	ID7 boot EPROM	
	Software version 1.xx	00 507 694
	Software version 2.xx	22 003 816
15	LP spacer, 6 mm	00 204 130
16	O-ring, 3.5 x 1.2	00 507 968
17	Base foot	00 200 068
18	O-ring, 6 x 1.5	22 002 509
19	ID7 pressure compensation set complete with O-ring and screw	22 002 277
20	Display module (dot matrix)	00 203 841
21	Cover seal	
	for desk unit	00 507 683
	for panel and wall unit	00 507 697
22	Plug-in card, neutral, markable	00 507 688
23	Keypad extension cable, only for wall and panel unit	22 000 359
24	Display cable	
	for desk unit	00 507 696
	for panel and wall unit	22 005 366
25	Cover, complete with window and keyboard	
	for desk unit, glass	22 000 375
	for desk unit, plastic, for US	22 002 280
	for panel and wall unit, glass	22 000 376
	for panel and wall unit, plastic, for US	22 002 500
26	ID7 label set, blank, markable	
	Desk unit, wall unit	22 000 378
	Panel unit	22 001 099

* When changing these parts observe the compatibility, see tables on page 3.

Item	Designation	Order Number
30	Cable for Analog Scale-ID7	00 507 003
32	ID7 blind plug set	22 001 066
33	Calibration set Conversion set for angle ID card and analog weighing platforms, set for weighing platforms of other manufacturers	22 000 386
34	Bolt set M3 x 5 bolts, washers	22 002 279
35	Stand adapter, tilting, for wall bracket, support and floor stand with old, fixed stand adapter	00 207 294
36	Terminating connector	00 504 241
37	Analog-ID7 Print, without EPROM	00 507 000
38	EPROM for Analog-ID7 Print	00 507 274

* When changing these parts observe the compatibility, see tables on page 3.

2.3 ID7 / ID7-2000 / ID7-24V accessories

Item	Designation	Order Number
A1	Alibi Memory-ID7	22 001 663
A2	Analog Scale-ID7 (analog scale connection), with EPROM	22 001 083
A3	IDNet-ID7 (IDNet/DigiNet expansion)	22 001 082
A4	CL20mA-ID7 interface 7-pin RS232-ID7 interface 8-pin RS422-ID7 interface 6-pin RS485-ID7 interface 6-pin 4 I/O-ID7 interface 19-pin AnalogOutput-ID7 interface 5-pin	22 001 084 22 001 085 22 003 031 22 001 086 22 001 087 22 001 090
A5	Ethernet-ID7 (network connection)	22 003 694
A6	Profibus-DP-ID7 (network connection)	22 004 940
	Wall bracket, for dimensions see page 45 black, plastic-coated completely rust-proof	 00 504 129 00 504 130
	Bracket stand, for dimensions see page 46 black, plastic-coated completely rust-proof	 00 504 127 00 504 128
	Floor stand, for dimensions see page 46 black, plastic-coated completely rust-proof	 00 504 131 00 504 132

3 ID7xx

3.1 Safety precautions for ID7xx

There is an increased risk of injury and damage when the explosion-protected ID7xx 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 ID7xx weighing terminal may only be installed, maintained and repaired by authorized METTLER TOLEDO service personnel.
- ▲ The mains connection may only be connected or disconnected by the owner's 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 ID7xx 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.
- ▲ 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. Always wear suitable working clothes when operating or performing service work on the system.
- ▲ Never use protective hoods from other weighing terminals.

Installation

- ▲ Only install or perform maintenance work on the weighing terminal in the hazardous zone if the following conditions are fulfilled:
  - the operator has issued a permit ("spark permit" or "fire permit"),
  - the area has been rendered safe and the operator's safety coordinator has confirmed that there is no danger,
  - the necessary tools are in position and the operator is wearing any protective clothing that may be required (to prevent the build-up of static electricity).
- ▲ The certification papers (certificates, manufacturer's declarations) must be present.

- ▲ When connecting external devices, always observe the maximum permissible total connected loads, see section 9.3.
- ▲ With installed devices, the installer is responsible for compliance with the freedom from leaks rating. For ex devices at least IP54 is required.
- ▲ Lay cables so that they are protected from damage.
- ▲ Only route cables into the housing of the system modules via the earthing cable gland or METTLER TOLEDO plug and ensure proper seating of the seals.
- ▲ Cable glands must be tightened so that a strain relief ≥ 100 N is ensured.
- ▲ If the weighing terminal is used in conjunction with an automatic or manual filling plant, all of the system modules must be equipped with a permanently wired emergency stop circuit, independent of the system circuit, in order to prevent personal injury or damage to other items of equipment.

Maintenance

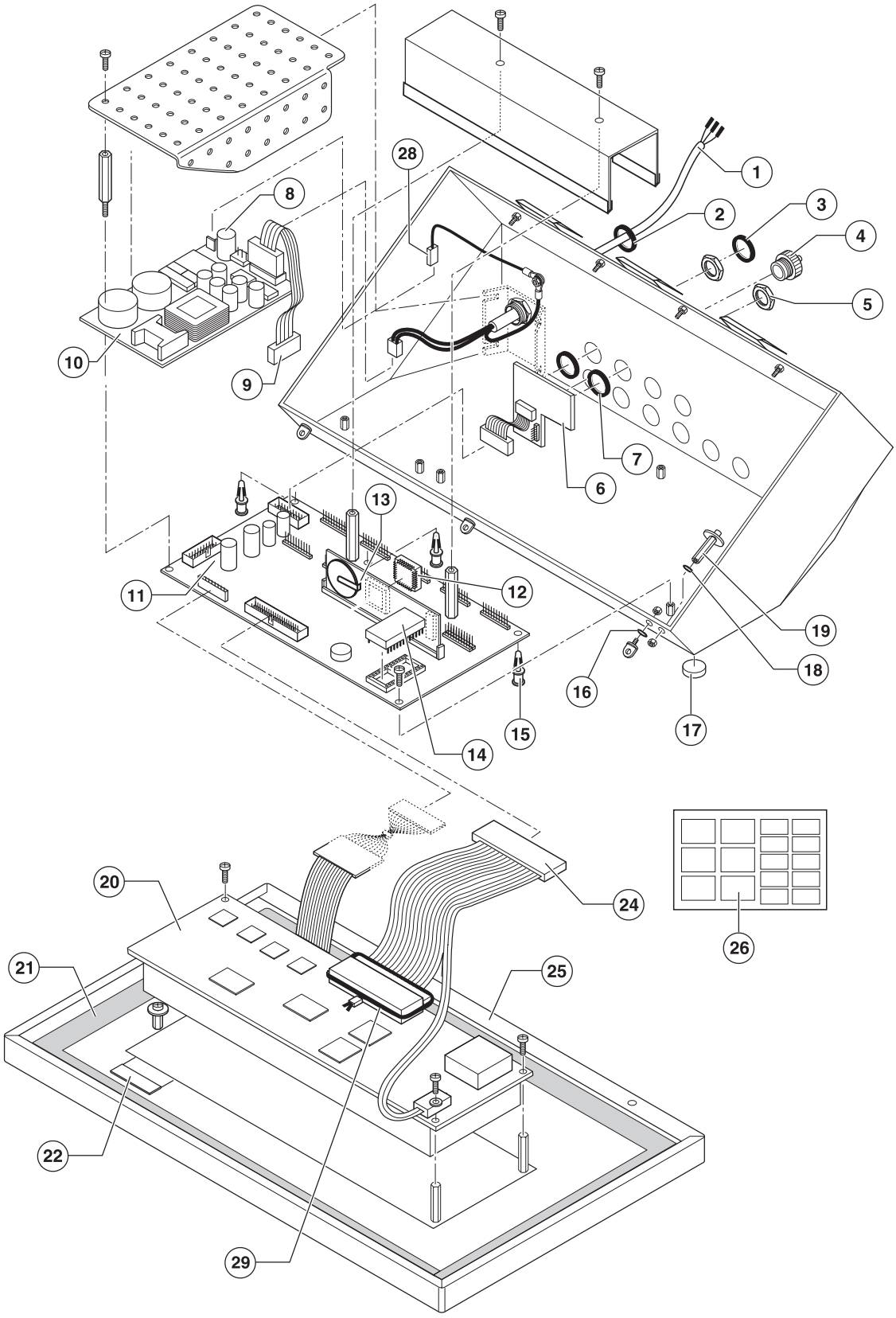
- ▲ Always disconnect the system from the power supply before commencing maintenance work. Where certain inspections, tests or adjustments require the system to remain connected to the power supply, this work must be performed with particular care.

Service

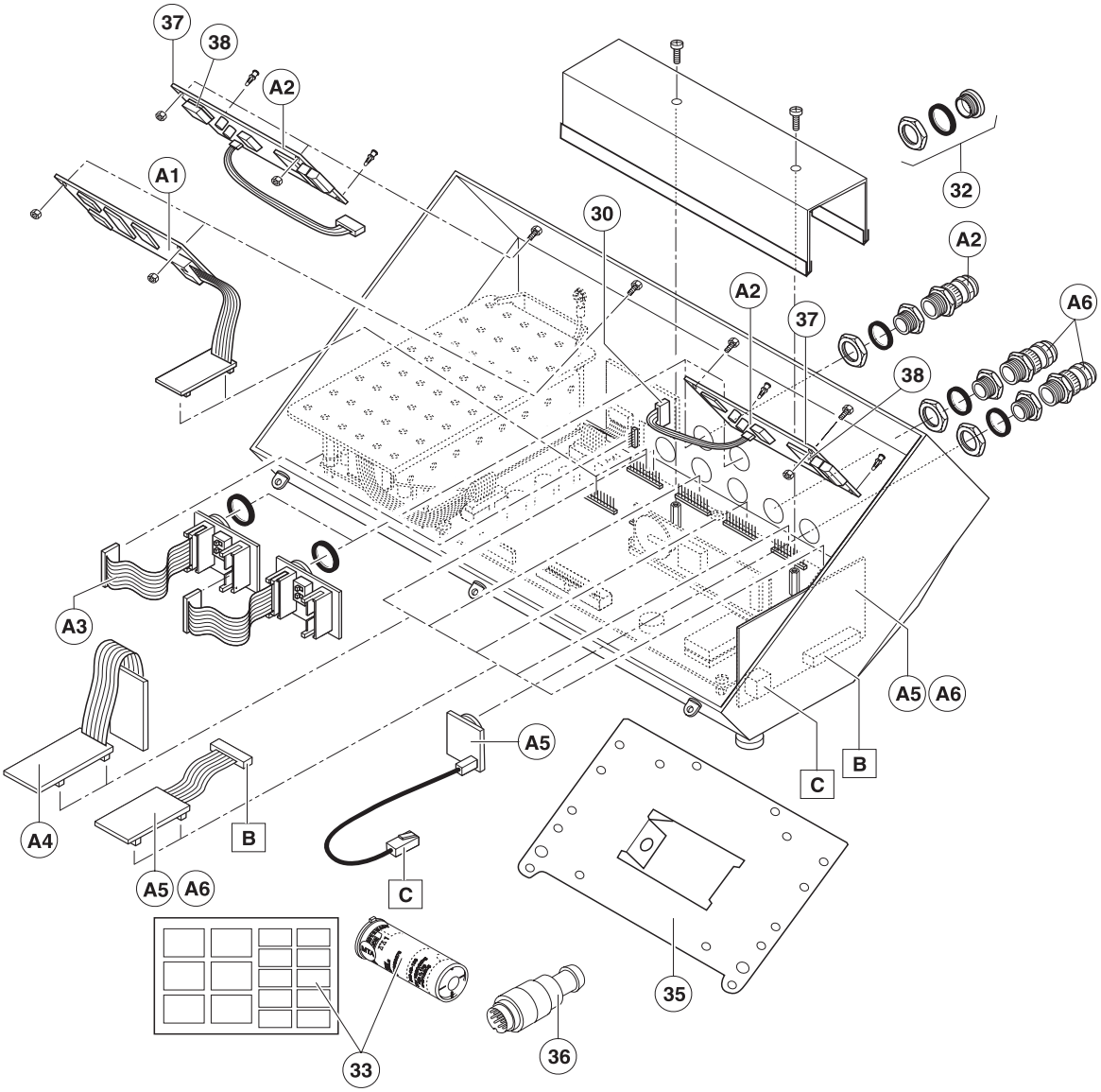
- ▲ Service technicians must have suitable training for hazardous-duty equipment.
- ▲ Zone 2 service work should be performed outside hazardous zones wherever possible. With Zone 22 the device may not be opened in an explosive dust atmosphere. Service work includes dismantling an Ex unit inside the hazardous zone and moving it into the safe zone.
- ▲ To avoid accident and injury, turn the weighing terminal off and wait for at least 5 minutes before connecting or disconnecting cables to/from the printed circuit board.
- ▲ Only use the parts or modules specified in the spare parts list as replacements.
- ▲ Do not separate connectors until the ID7xx has been deenergised.

3.2 ID7xx exploded views

3.2.1 ID7xx basic equipment

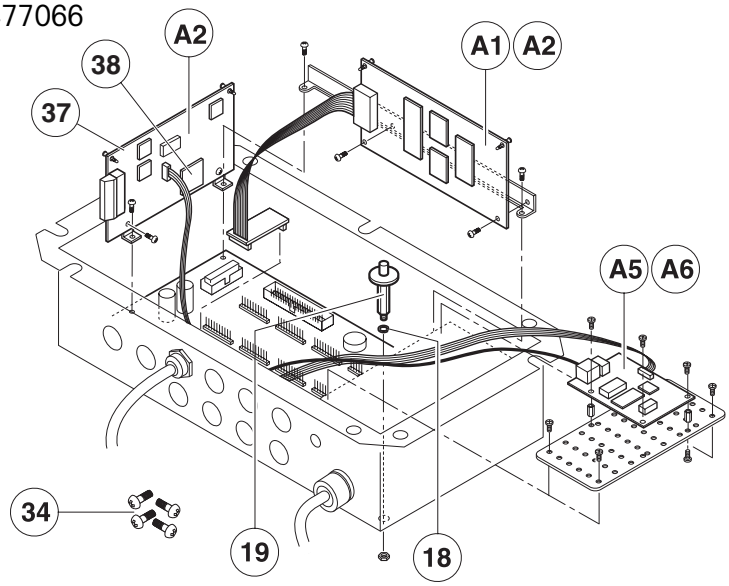


3.2.2 ID7xx desk unit optional equipment

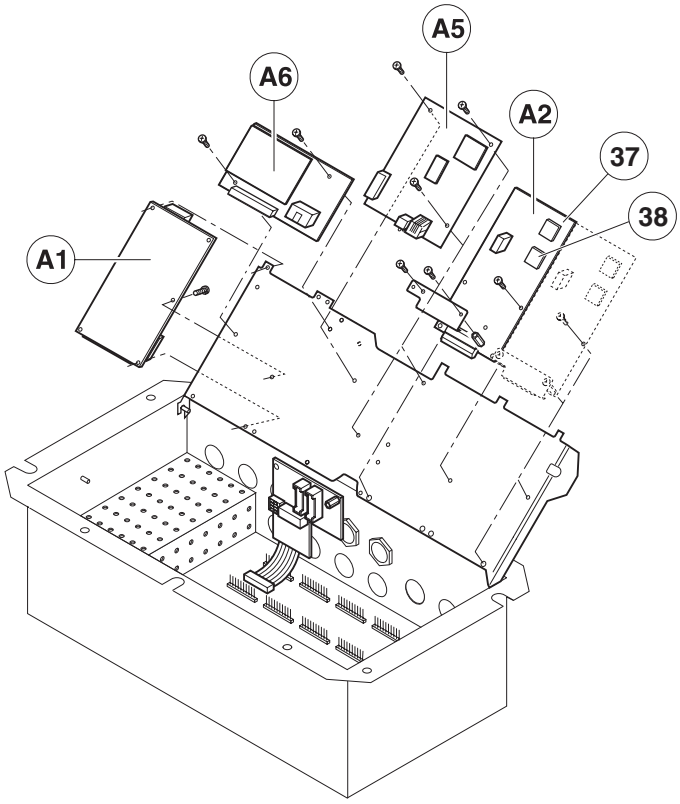


3.2.3 ID7xx wall/panel unit optional equipment

up to device number 2477066



from device number 2477067



3.3 ID7xx spare parts

Item	Designation	Order Number
1	**Mains cable**	**22 004 836**
2	Sealing ring for power cable gland	00 209 911
3	Sealing ring for ID card	22 000 714
4	Dust protection cap	00 089 263
5	Hexagon nut, M18 x 0.75	00 507 940
6	ID7 socket board	00 507 668
7	O-ring, 16 x 1.25	00 203 656
8	**Miniature fuse T1, 6 A TR5-T**	**00 089 862**
9	**Power supply unit board cable**	**22 004 383**
10	**Power supply unit ACT 48S**	**00 507 945**
11	ID7 board, without ID7 boot EPROM	00 507 525
12	ID7-2000 Pac application EPROM with ID7-2000-Base software EPROM with ID7-2000-Count software EPROM with ID7-2000-Data software EPROM with ID7-2000-Form software EPROM with ID7-2000-Form-XP software EPROM with ID7-2000-Sum software EPROM with ID7-2000-Dos software EPROM with ID7-2000-Dos-R software EPROM with ID7-2000-Control software EPROM with ID7-2000-Sys software	 22 004 100 22 004 101 22 004 102 22 004 103 22 005 893 22 004 104 22 004 105 22 004 106 22 004 107 22 005 341
13	ID7 memory module (without EPROM)	00 507 665
14	ID7 boot EPROM, Software version 2.xx	22 003 816
15	LP spacer, 6 mm	00 204 130
16	O-ring, 3.5 x 1.2	00 507 968
17	Base foot	00 200 068
18	O-ring, 6 x 1.5	22 002 509
19	ID7 pressure compensation set complete with O-ring and screw	22 002 277
20	**Display module (dot matrix)**	**22 003 068**

ID7xx-specific components appear in bold

Item	Designation	Order Number
21	Cover seal Desk unit Wall unit, panel unit	 00 507 683 00 507 697
22	Plug-in card, neutral, markable	00 507 688
24	Display cable	00 507 696
25	Cover, complete with window and keyboard for dev**nel and wall unit, glass**	 22 000 375 **22 004 839**
26	ID7 label set, blank, markable Desk unvnit	 22 000 378 22 001 099
28	Shielded connection cable, desk unit only	00 200 510
29	**Cable tie for display cable**	**00 088 950**
30	Cable for Analog Scale-ID7	00 507 003
32	ID7 blind plug set	22 001 066
33	Calibration set Conversion set for angle ID card and analog weighing platforms, set for weighing platforms of other manufacturers	22 000 386
34	Bolt set M3 x 5 bolts, washers	22 002 279
35	Stand adapter, tilting, for wall bracket, support and floor stand with old, fixed stand adapter	00 207 294
36	Terminating connector	00 504 241
37	Print Analog-ID7, without EPROM	00 507 000
38	EPROM for print Analog-ID7	00 507 274

ID7xx-specific components appear in bold

3.4 ID7xx accessories

For ID7xx the same accessories are possible as for ID7, ID7-2000 and ID7-24V, see page 11.

4 Checklists

4.1 Maintenance checklist

Visual inspection

➜ Check condition of following scale components:
- Housing
- Keypad; with ID7xx hairline cracks in the keyboard membrane are also considered damage
- Protective cover
- Weighing platform
- Peripherals

➜ Check condition of following cables:
- Mains cable
- Weighing-platform connection cable
- Data transmission cable (if installed)

➜ With ID7xx cable glands must be tightened so that a strain relief ≥ 100 N is ensured.

➜ Check cable for protected position.

➜ Check protective caps on interfaces for leaks.

Function check

➜ Press ON/OFF key.

➜ Check functions with entries via keypad (see operating instructions).

➜ Check settings of weighing platform (see service manual of connected weighing platform):
- Calibration
- Corner load
- Linearity
- Hysteresis

➜ Check plug-in connections for firm seating:
- Mains cable
- Weighing platform connection
- Data transmission cable (if installed)
- Peripherals connection (if installed)

4.2 Service checklist

Prior to troubleshooting and after performing service on the terminal and on the weighing platform, carry out the following test steps:

On terminal

- ➜ Check whether an operating error has been made.
- ➜ Check mains and weighing-platform connection cable.
- ➜ Check functions with entries via keypad (see operating instructions).
- ➜ Conduct weighing platform test (see operating instructions).
- ➜ Conduct display and keypad test:
  - – Switch off terminal and pull weighing platform plug.
  - – Switch on terminal; PLUG IN appears on the display.
  - – Press ZERO SET key until SERVICE MODE appears on the display.
  - – Press ENTER key.
    The terminal conducts the first part of the display test.
  - – Press ENTER key again.
    The terminal conducts the second part of the display test.
  - – Press ENTER key again; the keypad test is started.
  - – Press all displayed keys in sequence until END appears.
  - – End test with ENTER.
- ➜ Check all plug-in connectors for firm seating.
- ➜ Check connected units.

On weighing platform

- ➜ Check whether transport locks of the weighing platform are properly released and adjusted (see service manual of connected weighing platform).
- ➜ Check support of weighing platform.
- ➜ Make sure that the load plate is free and does not touch the surrounding area.
- ➜ Check maximum load and linearity.
- ➜ Check clearance of all stops and limits.
- ➜ Make sure that lever system is unobstructed on all sides.
- ➜ Check cutting edges, pans and bending bearings.

5 Troubleshooting

5.1 Operating error

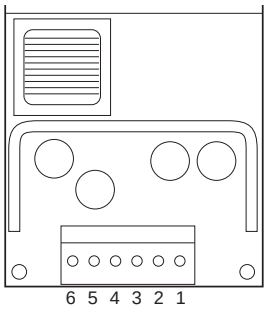
Operating errors on the terminal and operating states of the weighing platform for which a weight value determination is not permissible or not possible are displayed by the terminal in clear text (see operating instructions and installation information for ID7 weighing terminal).

5.2 Check voltages

The ID7 board must be connected during all measurements.

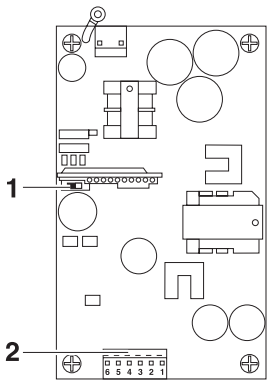
DANGER
Danger of shock when components on the power-supply unit board are touched.

➜ Do not touch parts marked with the symbol at the left.



Voltages on the ID7 power-supply unit board
The following voltages must be present at the plug of the power-supply unit board cable:

Pin 1	+24 V
Pin 2, 3	+5 V
Pin 6	+12 V
Pin 4, 5	GND



Settings and voltages on the ID7-24V power-supply unit board

- Check setting of the operating-mode selector switch (1):

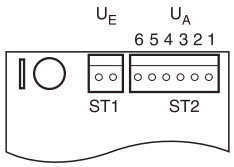
Switch position left	storage battery operation, factory setting
Switch position right	mains operation

- The following voltages must be available at the plug (2) of the power-supply unit board cable:

Pin 1	+24 V
Pin 2, 3	+5 V
Pin 6	+12 V
Pin 4, 5	GND

Voltages on the ID7-xx power-supply unit board

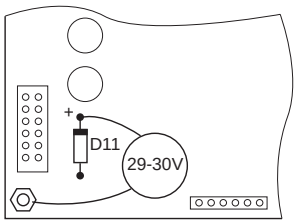
The following voltages must be present at the ST2 plug of the power-supply unit board cable:



Pin 1	GND
Pin 2	+5 V
Pin 3	GND
Pin 4	+12 V
Pin 5	GND
Pin 6	+24 V

Voltages on ID7 board

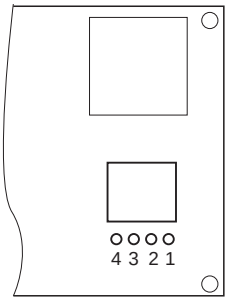
The following voltage must be present on the ID7 board:



Diode 11 to cathode: 29 – 30 V

Voltages on display board

The following voltages must be present on plug CN2 on the display board:



Pin 1	+5 V
Pin 2	GND
Pin 3	+24 V
Pin 4	GND

5.3 Faults and their elimination

Fault	Cause	Remedy
Terminal can not be switched on	• Power cable not plugged in	➜ Produce mains connection
	• Switch-off time too short in storage battery operation	➜ Switch off power for approx. 10 seconds
	• No mains voltage	➜ Check power cable
	• Fuse blown	➜ Check microfuse on power supply board and change if necessary
	• Storage battery level too low	➜ Charge storage battery
	• Operating-mode selector switch for storage battery operation / mains operation set incorrectly	➜ Set operating-mode selector switch to desired operating mode
	• Polarity of power supply reversed	➜ Connect power supply properly
Terminal fails to start	• Power supply unit defective	➜ Check voltage at power-supply unit board
No data transmission to measuring cell	• Fuse defective	➜ Check miniature fuse on power supply unit board and replace if necessary
	• Measuring cell defective	➜ Replace measuring cell (see service manual of connected weighing platform)
No entry possible via membrane keypad	• Keypad cable/keypad extension cable not connected or connected incorrectly	➜ Connect keypad cable/keypad extension cable correctly
	• Keypad defective	➜ Replace cover
	• ID7 board defective	➜ Replace ID7 board
Display dark	• Display is switched to dark with interface command	➜ Switch on display with interface command
	• Fuse on power-supply unit board defective	➜ Replace miniature fuse on power supply unit board
	• Display cable defective	➜ Replace display cable
Terminal conducts a general reset after each switch-on	• Memory module defective	➜ Replace memory module
Membrane keyboard "inflates"	• Pressure compensation set defective	➜ Replace pressure compensation set
ERROR 0 IDNET	• Weighing platform defective	➜ Check weighing platform and repair or replace if necessary
	• IDNet cable defective	➜ Replace IDNet cable
ERROR 1 IDNET	• Software in weighing platform defective	➜ Replace software in weighing platform

Fault	Cause	Remedy
PLUG IN	• IDNet boards not properly installed	➜ Correctly set switch on socket board and/or IDNet board, see 9.2.5
	• Weighing platform connection not in use	➜ Push blind plug onto weighing platform connection not in use
WRONG SOFTWARE	• Wrong Pac EPROM inserted	➜ Insert original Pac EPROM
	• Wrong software loaded	➜ Load original software

6 Repairing

6.1 Open terminal

EXPLOSION HAZARD

➜ Do not open the ID7xx in an explosive dust atmosphere.

➜ On the ID7xx, wait 5 minutes after disconnection from the mains before opening the device.

CAUTION

Before opening the unit:

1. Note the customer-specific settings.
2. Switch off the terminal.
3. On the ID7xx and ID7-24V, deenergise the mains connection, and on the ID7 and ID7-2000 pull the mains plug.
4. When the terminal is separated from the mains, disconnect the connected weighing platform(s) and peripherals.

Notes

- Keep the removed screws in a safe place.
- Always lay the components on a dust-free, antistatic, non-magnetic surface.
- Never use force during removal and installation.

6.2 Replace display

1. Open the terminal, see section 6.1.
2. Pull the display cable (24) off the ID7 board.
3. Unscrew the 3 screws and remove the display (20).
4. Insert the new display and mount in reverse order.
5. On the ID7xx, secure the display cable again with a cable tie on the display plug.

6.3 Replace cover

1. Open the terminal, see section 6.1.
2. Pull the keypad cable or keypad extension cable (23) off the ID7 board.
3. Remove the display (20) from the old cover (25) and install it in the new cover, see section 6.2.
4. Remove the plug-in card (22) from the old cover (25) and install it in the new cover.

5. Connect the keypad cable or keypad extension cable (23) to the ID7 board.
6. Close terminal. When doing so, ensure that the keyboard cable is not pinched. Protection type IP68 is only guaranteed for the desk unit if the three locking springs are fully engaged.

Important
The same measuring data labels must be applied on the new cover as on the old cover, see chapter 8.

6.4 Replace power supply unit and fuse

Remove power supply unit

1. Open the terminal, see section 6.1.
2. Disconnect the power-supply unit board cable (9) from the ID7 board.
3. Unscrew the 2 resp. 4 screws and remove the cover plate.
4. Unscrew the 2 resp. 4 spacer studs and take out the power supply unit (10).
5. On the ID7-24V, unscrew the earthing cable.

Replace fuse

ID7 / ID7-2000 ➜ Remove the defective miniature fuse (8) with a pair of tweezers and install a new fuse.

ID7xx ➜ Unsolder the defective microfuse (8) and solder in a new fuse.

EXPLOSION HAZARD

➜ Do not solder in a fuse base.

ID7-24V Fuses are not available as spare parts for the ID7-24V.

Replace power supply unit

➜ Disconnect the power supply line from the defective power supply and connect it to the new power supply.

Mount power supply unit

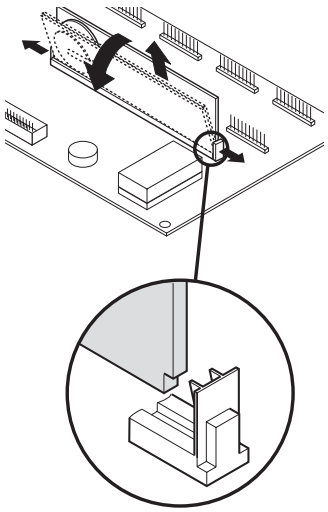
➜ Assemble in reverse order.

6.5 Replace ID7 board

Note
Observe the compatibility of the components when replacing ID7 PCB, ID7 memory module and EPROMs, see tables on page 3.

1. Open the terminal, see section 6.1.
2. On the ID7xx, remove the interface mounting plate over the interface connections.
3. Pull all cables off the ID7 board (11).
4. If installed, pull the optional interface module off the ID7 board.
5. Pull the ID7 memory module (13) and ID7 boot EPROM (14) off the ID7 board.
6. Unscrew the 3 resp. 4 screws and remove the ID7 board.
7. Remove the spacers from the defective ID7 board and mount them on the new ID7 board.
8. Insert the new ID7 board and mount it with 3 resp. 4 screws.
9. If installed, push the interface module onto the new ID7 board.
10. Push the ID7 memory module and ID7 boot EPROM onto the ID7 board.
11. On the ID7xx, screw in the 2 pins, position the interface mounting plate with the plastic support and mount with 2 screws.
12. Connect the keypad cable or keypad extension cable (23), display cable (24), power-supply unit board cable (9) and IDNet cable to the ID7 board.
13. On the ID7xx, secure the display cable with the cable tie (29).

6.6 Replace ID7 memory module



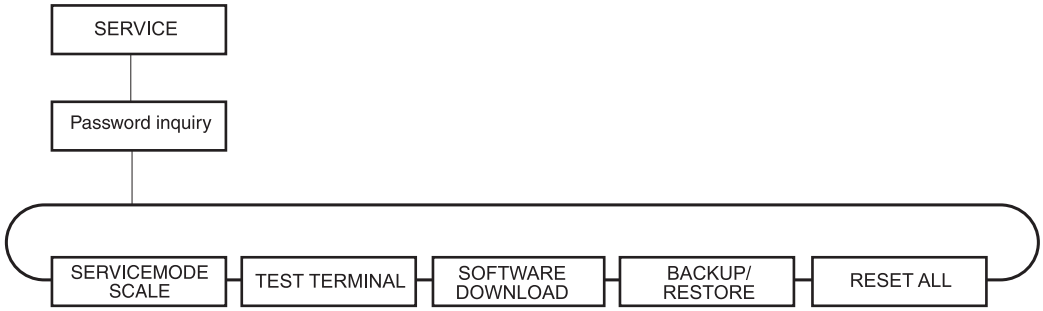
Note
Observe the compatibility of the components when replacing ID7 PCB, ID7 memory module and EPROMs, see tables on page 3.

1. Open the terminal, see section 6.1.
2. Bend the bracket of the ID7 memory module (13) outward on both sides, tilt the memory module toward the front and remove.
3. Remove the PAC application (12) from the defective ID7 memory module and insert it on the new ID7 memory module.
4. Tilt the ID7 memory module slightly toward the front and insert, then move into the vertical position until it engages.

7 Service mode

7.1 Entry into the service mode

1. Activate the master mode and select SERVICE.
2. Enter the password 2481632; the following selection appears:



7.2 Settings in service mode

With the ID/PC-Expert service program software can be loaded, customer-specific settings saved or loaded and formatting settings for the GA46 loaded via the COM1 serial port of the ID7.
All information on connecting and operation on the computer is provided with the service program.

7.2.1 SERVICE MODE SCALE block

➜ Select the scale and carry out the weighing platform settings, see service mode of the connected weighing platform.

7.2.2 TEST TERMINAL block

➜ Activate TEST TERMINAL and conduct a terminal test, see section 4.2.

7.2.3 SOFTWARE DOWNLOAD block

With this function software updates can be loaded from a computer to the ID7 via the COM1 serial port without the EPROM having to be replaced.

Note
SOFTWARE DOWNLOAD may not be interrupted.

➜ Activate SOFTWARE DOWNLOAD; DOWNLOAD ACTIVE appears in the display. Loading the software takes approx. 6 minutes, then the ID7 switches over to the weighing mode.

After the software update the ID7 checks whether the correct software has been loaded. For example, for a ID7-Count only the CountPac software may be loaded.
If incorrect software has been loaded, the WRONG SOFTWARE error message appears. In this case:

➜ Switch the terminal off and then on again and repeat SOFTWARE DOWNLOAD.

Note
If incorrect Pac software has been loaded, the terminal can nevertheless be operated, however only with the functions of the ID7 Base.

7.2.4 BACKUP/RESTORE block

With this function customer-specific settings can be saved to an external computer or loaded from there via the COM1 serial port.

➜ Activate BACKUP or RESTORE; BACKUP ACTIVE or RESTORE ACTIVE appears in the display.
After BACKUP or RESTORE is completed, the ID7 switches over to the weighing mode.

7.2.5 RESET ALL block

This block resets all parameters to the factory setting.

8 Marking and sealing

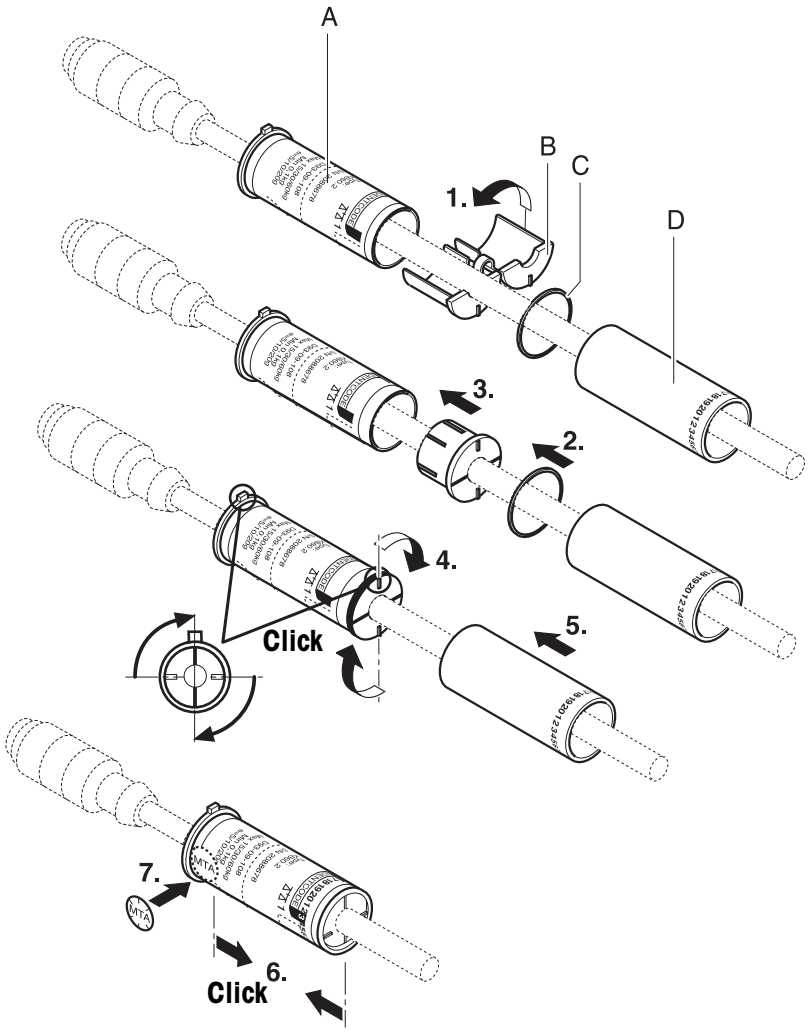
The procedure for marking and sealing for calibrated weighing systems is dependent on the housing shape of the ID7 and the weighing platform to be connected.

8.1 Desk unit

8.1.1 New IDNet weighing platforms

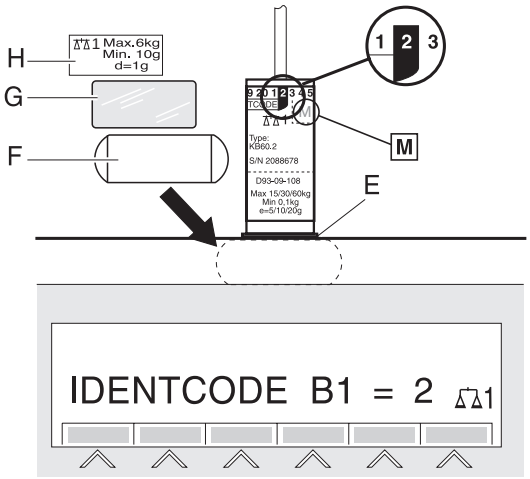
From the factory the ID card of IDNet weighing platforms is provided with the measuring data sticker of the weighing-platform standard configuration.

Mount ID card



1. Check whether the measuring data sticker for the set weighing platform configuration and, if necessary, also the EC calibration symbol (green M), has (have) been applied to the inner socket (A) of the ID card.
   If not: If necessary, remove the EC calibration symbol and the proper measuring data sticker from the sticker sheet and apply it to the inner socket (A) as shown.

2. Push the ID card parts (A) to (D) over the weighing platform plug in the order shown.
3. Fold together center section (B) and lock with O-ring (C).
4. Push the center section (B) into the inner socket (A) with the applied measuring data sticker and turn until it engages.
5. Push the outer socket (D) with the stamped-in ID codes over the inner socket until it engages.
6. Align the outer socket so that the same ID code is shown in the white field of the ID code as on the terminal.
7. Seal transition from inner to outer socket at marked field with a push mark.
8. Mount sealing ring (E) on weighing platform connection, plug in weighing platform plug and screw on.
9. Push ID card completely over weighing platform plug and turn so that ID code and calibration symbol face upward. In this position the ID card on the plug engages.



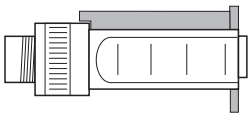
Mount Max-Min sticker

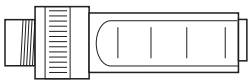
The Max-Min sticker consists of a carrier (G) and a lower section (F).

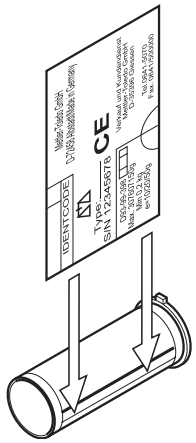
1. Pull the protective film off the lower section (F) and apply it to the terminal near the display.
2. Remove the Max-Min film (H) of the weighing platform from the sticker sheet and apply it to the carrier (G).
3. Clip the carrier (G) onto the lower section (F).
4. On weighing platforms with a maximum load < 100 kg, remove the additional sticker "Not permissible at open sales points" from the sticker sheet and apply it to a highly visible location on the terminal.

8.1.2 Old IDNet weighing platforms

Old IDNet weighing platforms are equipped with the ID card elbow, which can no longer be used in the ID7. With the calibration set 22 000 386 these weighing platforms can nevertheless be operated as certified with the ID7.







1. Remove ID card elbow from weighing platform cable.
2. Cut the tab off the weighing platform plug until the plug fits in the inner socket of the ID card.
3. Label the blank calibration sticker from the blank sticker sheet of the calibration set with the complete calibration data (measuring data, platform model, platform no., scale no.) using permanent ink.
4. Label blank measuring data sticker with permanent ink.
5. Laminate calibration plate and measuring data plate.
6. Apply measuring data plate to inner socket of ID card as shown.
7. Further assembly as described for IDNet weighing platforms, see section 8.1.1.

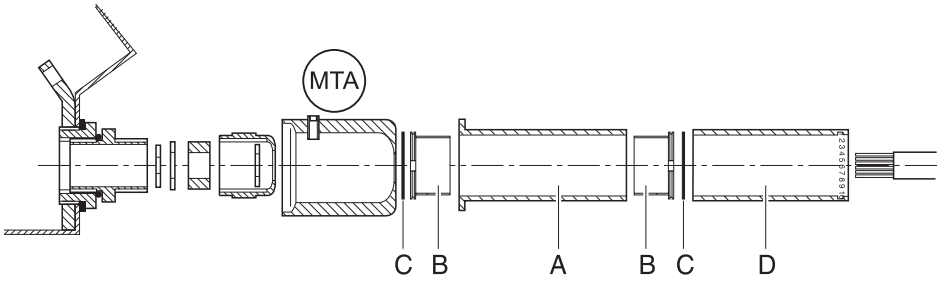
8.1.3 Analog weighing platforms

- METTLER TOLEDO analog weighing platforms with a new ID card:
  The ID card is already marked for the standard configuration.
- METTLER TOLEDO analog weighing platforms with old lead sealing sleeve:
  The calibration set 22 000 386 is required for these weighing platforms.
  Weighing platform stickers can be taken from the sticker sheet of the weighing platform or must be labeled with permanent ink.
- Analog weighing platforms of other manufacturers
  The calibration set 22 000 386 is required for these weighing platforms.
  All weighing platform stickers must be labeled with permanent ink.

Connect weighing platform

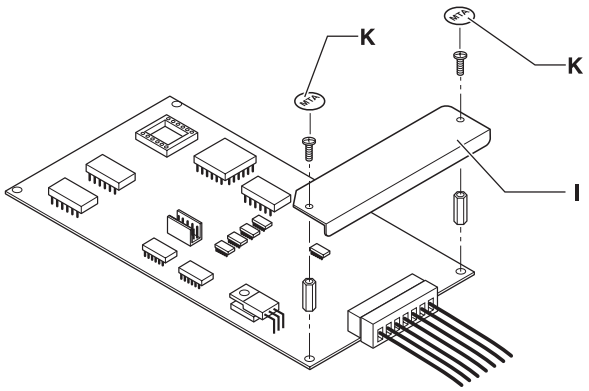
1. Check whether the measuring data sticker for the set weighing platform configuration and, if necessary, also the EC calibration symbol (green M), has (have) been applied to the inner socket (A) of the ID card.
   If not: If necessary, remove the EC calibration symbol and the proper measuring data sticker from the sticker sheet and apply it to the inner socket (A).

2. Push the ID card parts (A) to (D) over the cable sheathing in the order shown. On analog weighing platforms the ID card socket is closed on both ends with the center section (B) and the O-ring (C).



3. The further procedure for weighing platform connection is as described in the operating and installation instructions for the ID7 weighing terminal or the Analog Scale-ID7.

Seal analog board



1. Mount lead sealing plate (I) over plug with 2 screws.
2. Seal both screws with slide marks (K).

Mount and seal ID card

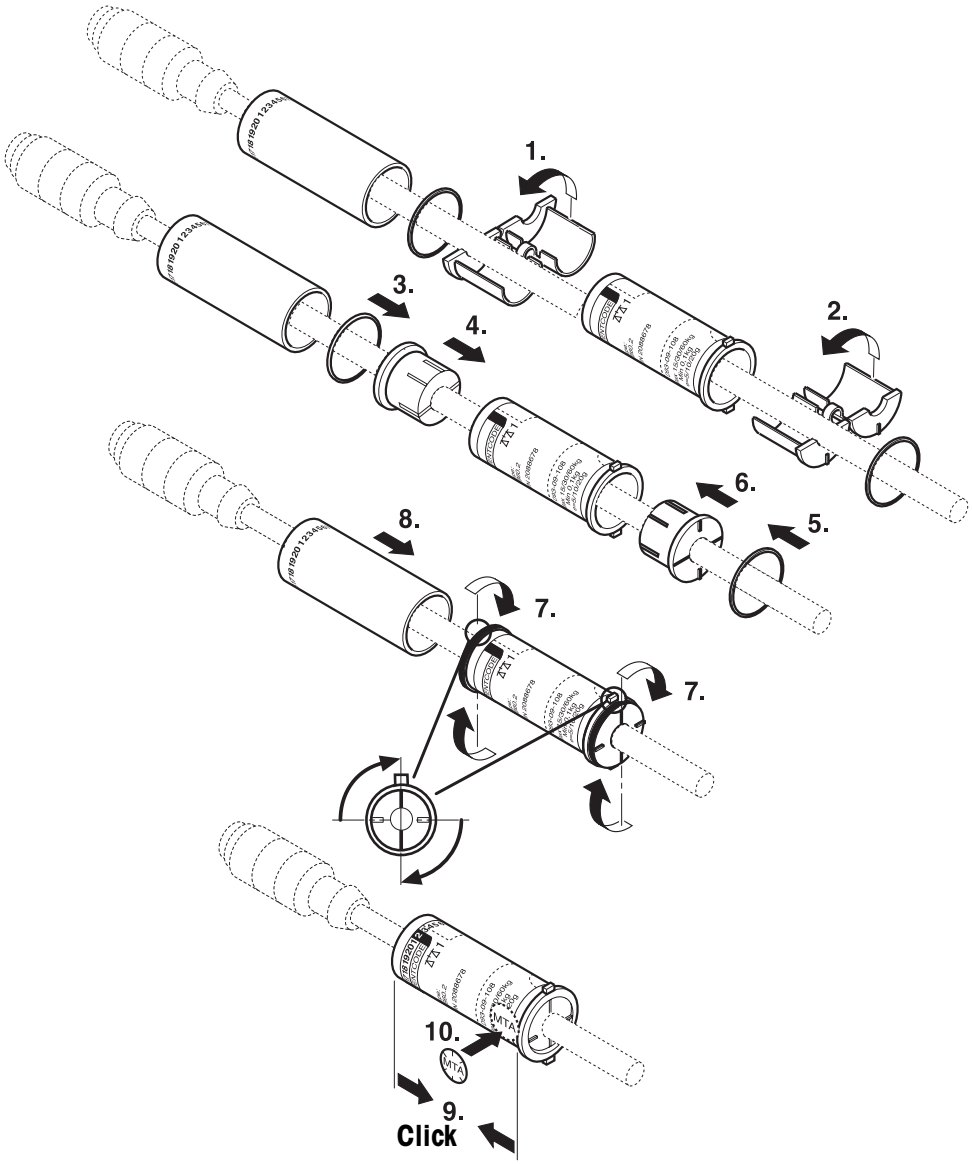
➜ Further assembly is as for the new IDNet weighing platforms, see section 8.1.1.

8.2 Wall unit

8.2.1 Wall unit with cable connection from below

Important

On these unit versions, observe the different installation position of the ID card, the ID card socket is closed at both ends.



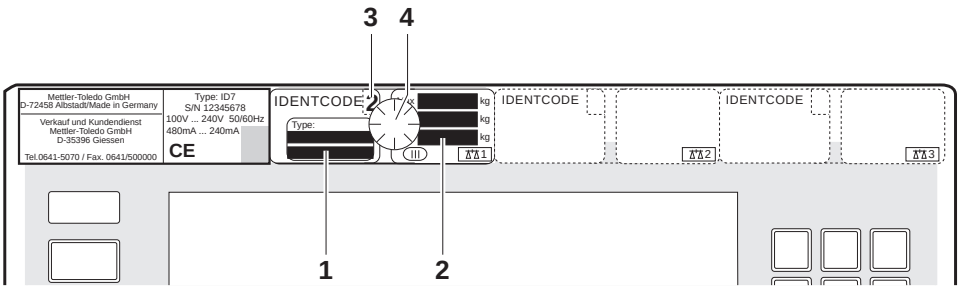
Further procedure for all weighing platforms: see ID7 desk unit, section 8.1.

8.2.2 Wall unit with cable connection from above

For all weighing platforms the marking and sealing correspond to that of the ID7 desk unit, see section 8.1.

8.3 Panel unit

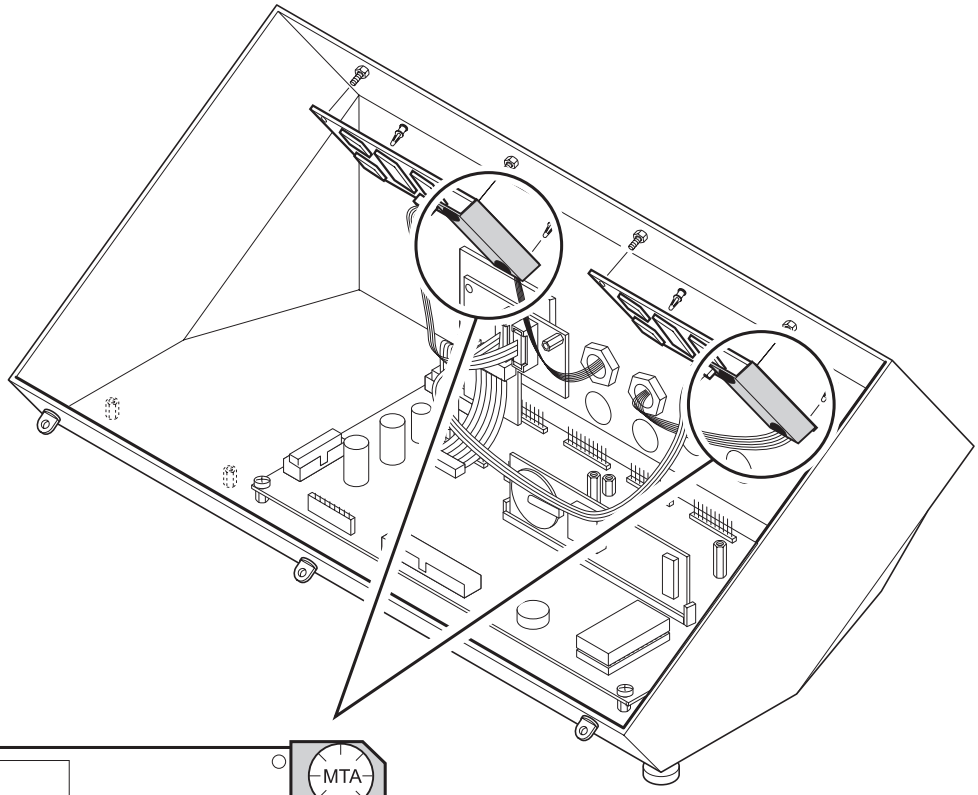
No ID card is required for the ID7 panel unit. Instead of it a blank sticker sheet is provided for certified marking.

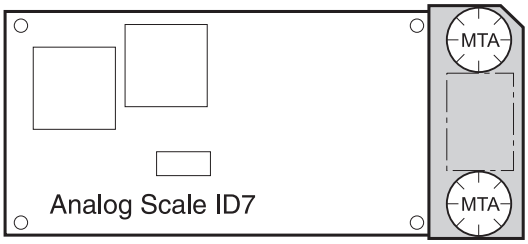


1. Connect the weighing platform.
2. For METTLER TOLEDO weighing platforms, remove the type sticker (1) of the weighing platform from the sticker sheet and apply it to the ID code sticker.
   For weighing platforms of other manufacturers, label a blank type sticker with permanent ink and laminate.
3. For METTLER TOLEDO weighing platforms, remove the measuring data sticker (2) of the weighing platform from the sticker sheet of the weighing platform and apply it to the ID code sticker.
   For weighing platforms of other manufacturers, label a blank measuring data sticker with permanent ink and laminate.
4. Display the ID code, remove the proper ID code from the sticker sheet and apply it to the ID code field (3).
5. Seal the ID code, type sticker and measuring data sticker with a slide mark (4).

8.4 Sealing diagrams

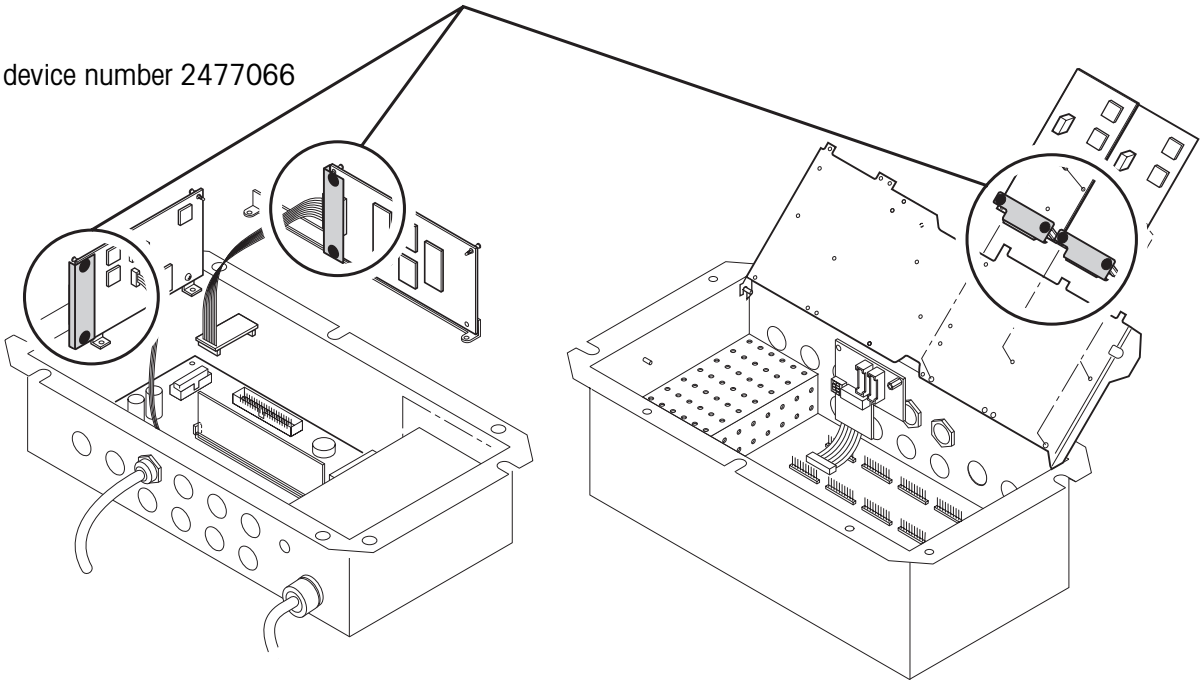
8.4.1 ID7 with Analog Scale-ID7



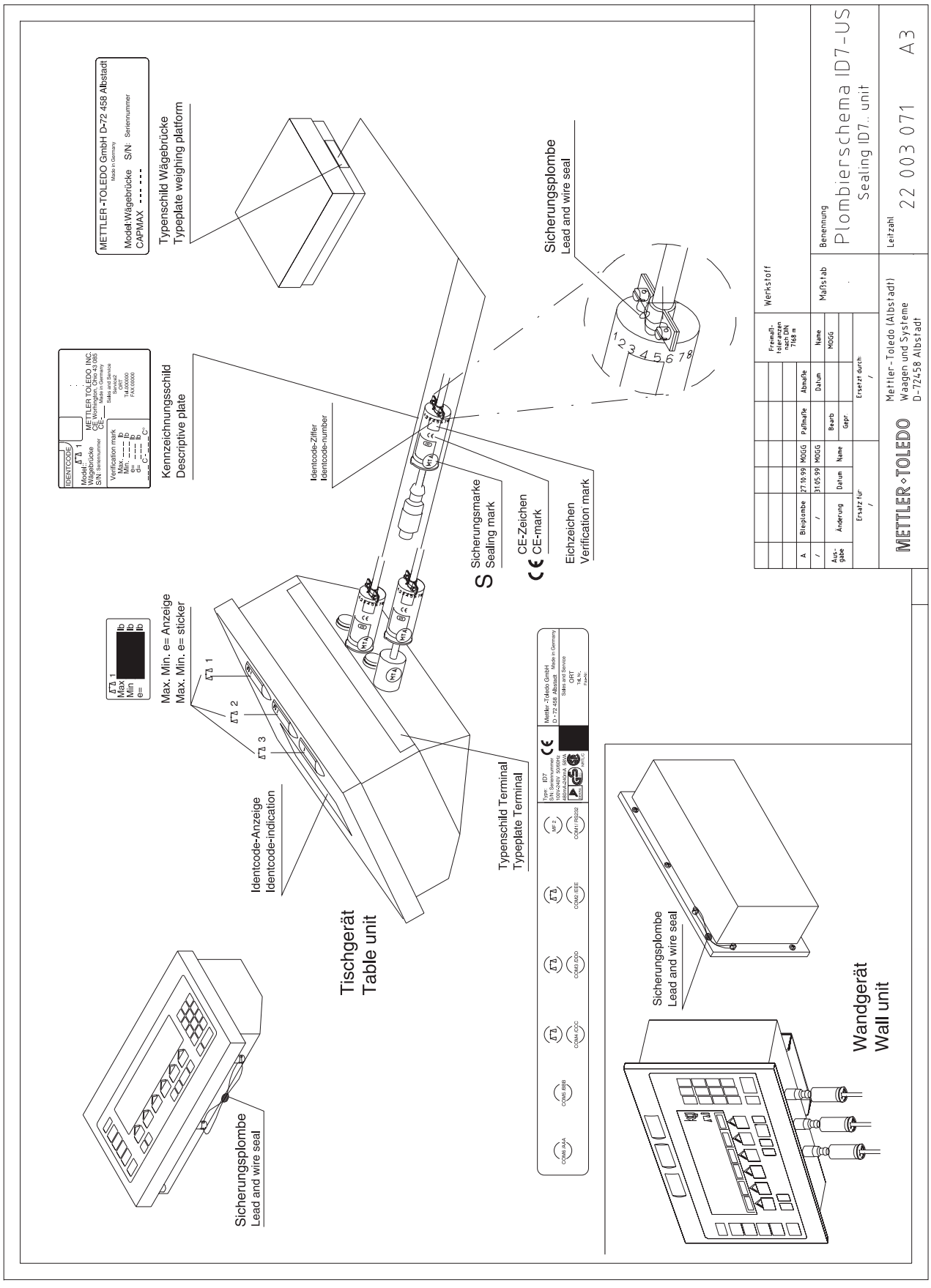


from device number 2477067

up to device number 2477066



8.4.2 ID7-US sealing diagram



9 Annex

9.1 Software compatibility

ID7 / ID7-2000 / ID7-24V

- The ID7 / ID7-2000 / ID7-24V weighing terminals are compatible with all weighing platforms with an IDNet output of the type series D, F, K, N, R and G.
- If Analog Scale-ID7 is installed, METTLER TOLEDO MultiRange DMS weighing platforms with analog interfaces of the types DB, DCC, D…T, N…T, SPIDER and strain gauge load corners RWM can be connected.

ID7xx

- The ID7xx weighing terminal is compatible with all weighing platforms with a K series IDNet output.
- If the analog weighing platform connection Analog Scale-ID7 is installed, weighing cells approved for Zone 2 and Zone 22 can be connected.

9.2 Connecting weighing platforms

9.2.1 Starting up ID7 with one IDNet weighing platform

1. Open weighing terminal and ensure that switches on socket board is set for operation of **one** weighing platform, see table in section 9.2.5.
2. Connect weighing platform and switch on weighing terminal. The connected weighing platform is initialized as scale 1.

9.2.2 Starting up ID7 with several IDNet weighing platforms

1. Open weighing terminal and ensure that switch on socket board and IDNet board of scale 2 (and scale 3) are set for operation of 2 or 3 weighing platforms with IDNet interface, see table in section 9.2.5.
2. Connect terminating connector 00 504 241 to weighing platform connections 2 (and 3).
3. Connect weighing platform 1 and switch on weighing terminal. This weighing terminal is initialized as scale 1.
4. Remove terminating connector from weighing platform connection 2.
5. Connect weighing platform 2 and switch on weighing terminal. This weighing platform is initialized as scale 2.
6. Remove terminating connector from weighing platform connection 3.
7. Connect weighing platform 3 and switch on weighing terminal. This weighing platform is initialized as scale 3.

9.2.3 Starting up ID7 with IDNet and analog weighing platforms

Notes

- If only one analog weighing platform connection is installed, it must be installed at the installation position for scale 3.
- With the old socket PCB (technical version 00, see yellow label 00507668/**00**/...) only one analog weighing platform is possible. ST3 and dip switch S5 and S6 are not present on this socket PCB.

Put scale 1 (IDNet) into operation

See section 9.2.1.

Put scale 2 into operation

1. Switch off weighing terminal and open.
2. Set switches on socket board and, if present, on IDNet board of scale 2 for selected combination of scale 1 and scale 2, see table in section 9.2.5.
3. Connect weighing platform and switch on weighing terminal. The connected weighing platform is initialized as scale 2.

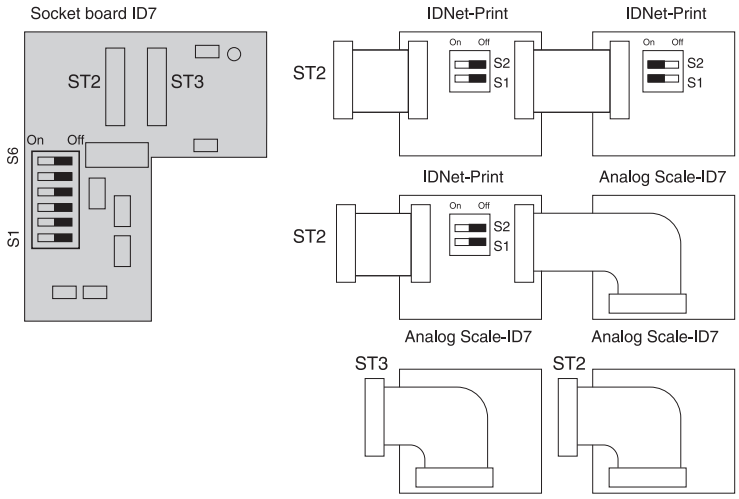
Put scale 3 into operation

1. Switch off weighing terminal and open.
2. Set switches on socket board, on IDNet board of scale 2 and, if present, on IDNet board of scale 3 for selected combination of scale 1, 2 and 3, see table in section 9.2.5.
3. Connect weighing platform and switch on weighing terminal. The connected weighing platform is initialized as scale 3.

9.2.4 Installation position of ID7 socket board, IDNet-print and Analog Scale-ID7

View of housing interior

Installation position 1 **Installation position 2** **Installation position 3**



9.2.5 Switches on the ID7 socket board and IDNet board

Scale connections			**Socket board**						**IDNet board S2**		**IDNet board S3**	
Scale 1	**Scale 2**	**Scale 3**	**S1**	**S2**	**S3**	**S4**	**S5**	**S6**	**S1**	**S2**	**S1**	**S2**
IDNet	–	–	on	on	off	off	–	–	–	–	–	–
IDNet	IDNet	–	off	off	off	off	on	on	on	on	–	–
IDNet	IDNet	IDNet	off	off	off	off	on	on	off	off	on	on
IDNet	Analog	–	off	off	off	off	on	on	–	–	–	–
IDNet	IDNet	Analog	off	off	off	off	on	on	off	off	–	–
IDNet *	Analog	–	off	off	on	on	on	on	–	–	–	–
IDNet *	IDNet *	Analog	off	off	on	on	on	on	off **	off	–	–
IDNet	Analog *	–	on	on	off	off	–	–	–	–	–	–
IDNet	Analog	Analog	off	off	off	off	off	off	–	–	–	–
IDNet *	Analog	Analog	off	off	on	on	off	off	–	–	–	–
IDNet	Analog	Analog *	off	off	off	off	on	on	–	–	–	–
IDNet *	Analog	Analog *	off	off	on	on	on	on	–	–	–	–

* Connection present, but not in use

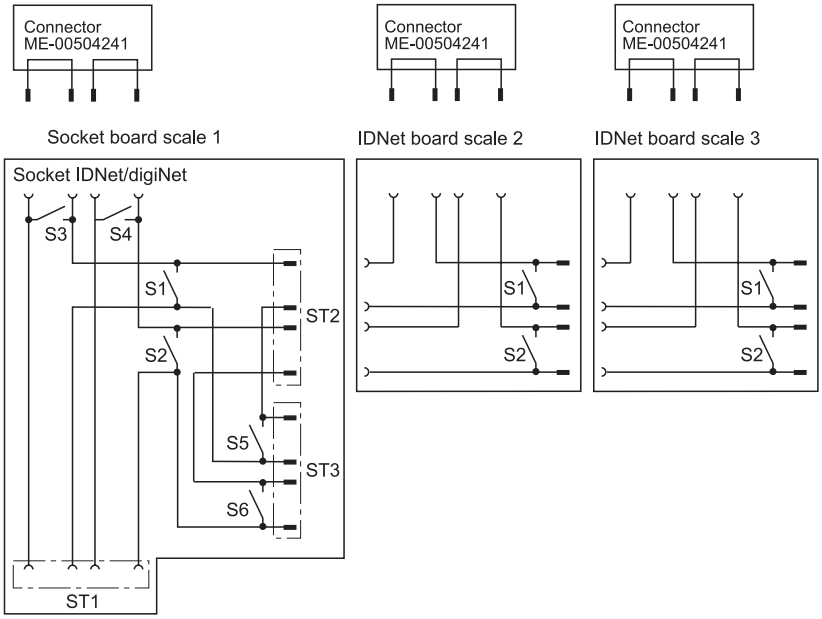
** In this configuration the external terminating connector 00 504 241 must also be connected to scale connection 2.

Combinations highlighted in grey are not possible with the old socket PCB (technical version 00).

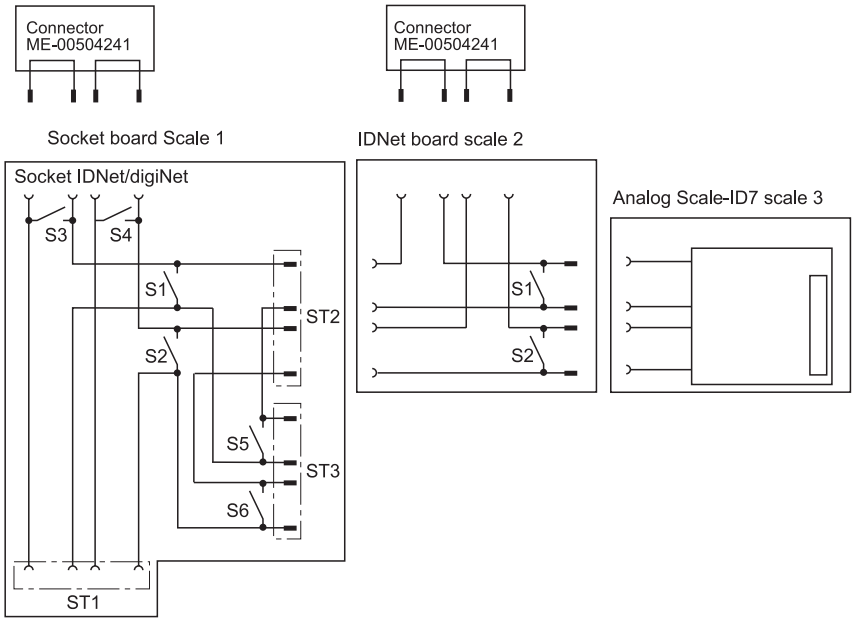
Note

S1 and S2 must be closed as a termination of the current loop for the last weighing platform connection. Analog Scale-ID7 closes the loop automatically.

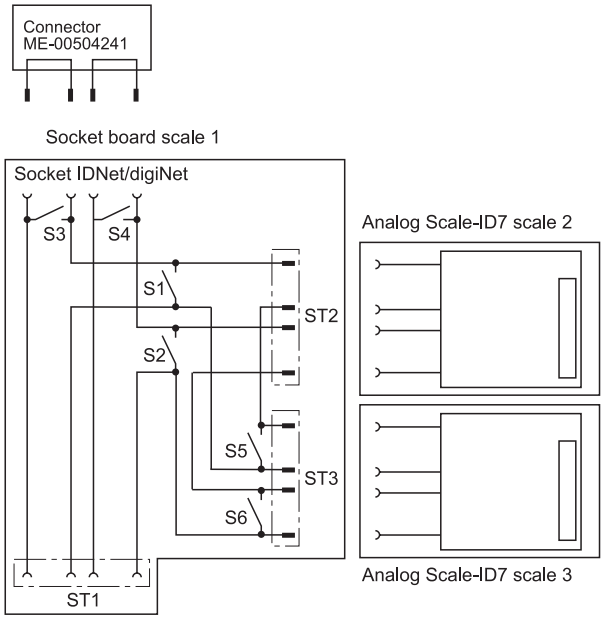
Circuit diagram max. 3 IDNet weighing platforms



Circuit diagram max. 1 Analog Scale-ID7



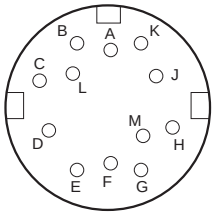
Circuit diagram max. 2 Analog Scale-ID7



9.3 Connection assignments

Unassigned pins are not listed.

9.3.1 Weighing platform connection



External view

Pin A	TXD+, transmission loop of weighing platform
Pin B	VDIS 30 V
Pin C	VNOR 12 V
Pin D	RXD+, receiving loop of weighing platform
Pin F	RXD–, receiving loop of weighing platform
Pin G	Ground
Pin H	Logic GND
Pin J	TXD–, transmission loop of weighing platform

9.3.2 Interface connections

The ID7 weighing terminal can be equipped with up to 6 interface connections. Information on configuring the interfaces is contained in the operating instructions and installation information for the ID7 weighing terminal or the ...-ID7 interface module.

CAUTION

➜ When configuring several interfaces, observe the following total load of the output voltages:

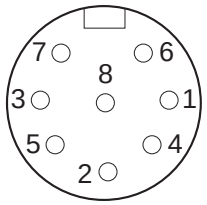
	ID7 / ID7-2000 / ID7-24V	**ID7xx**
Output voltage 5 V	max. 600 mA	max. 300 mA
Output voltage 12 V	max. 200 mA	max. 200 mA
Output voltage 24 V	max. 100 mA	max. 100 mA

EXPLOSION HAZARD

➜ When connecting several external devices to the 5 V output voltage of the ID7xx, observe the following connection values for devices including cables:

Total capacity parallel on 5 V	max. 200 µF
Total inductance in series	max. 60 µH

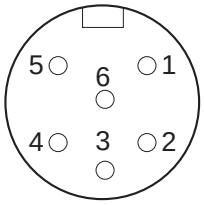
RS232 connection assignment



External view

Pin 1	Ground
Pin 2	TXD, transmission cable of scale
Pin 3	RXD, receiving cable of scale
Pin 4	DTR, Data Terminal Ready
Pin 5	+5 V, max. 250 mA (factory setting) or +12 V, max.100 mA (for COM2 ... COM6 only)
Pin 6	Signal Ground
Pin 8	DSR Data Set Ready

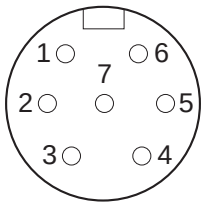
RS485-ID7 interface connection assignment



External view

	RS422	**RS485**	**Cable 00 204 933**
Pin 1	GND electrically isolated	GND electrically isolated	white
Pin 2	+5 V, max. 100 mA electrically isolated	+5 V, max. 100 mA electrically isolated	brown
Pin 3	TXD+	TXD+ / RXD+	green
Pin 4	TXD–	TXD– / RXD–	yellow
Pin 5	RXD–	not in use	pink
Pin 6	RXD+	not in use	gray

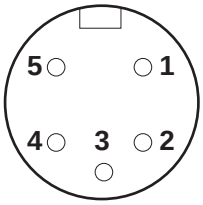
CL 20mA-ID7 interface connection assignment



External view

Pin 1	RXD+, receiver
Pin 2	RXD–, receiver
Pin 4	TXD+, transmitter
Pin 5	TXD–, transmitter
Pin 7	Ground

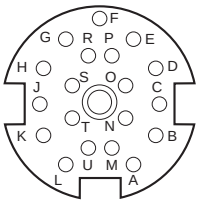
Analog Output-ID7 interface connection assignment



External view

Pin 1	V out	Analog output voltage
Pin 2	0 V (V out)	Reference potential
Pin 3	I out +	Analog current output, positive
Pin 4	I out –	Analog current output, negative
Pin 5	0 V (V out)	Reference potential

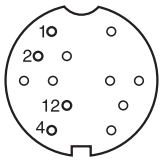
4 I/O-ID7 interface connection assignment



External view

		Cable	4-ID7 relay box	
4 I/O-ID7		**00 504 458**	**Terminal 1**	
Pin A, L	+24 V, max. 80 mA	black	24 V	Pin 7, 8
Pin B	Output 1, max. 20 mA	white	OUT 0	Pin 4
Pin C	Output 2, max. 20 mA	brown	OUT 1	Pin 3
Pin D	Output 3, max. 20 mA	green	OUT 2	Pin 2
Pin E	Output 4, max. 20 mA	yellow	OUT 3	Pin 1
Pin M, U	0 V	violet	0 V	Pin 5, 6
Pin N	Input 1	gray/pink	IN 0	Pin 12
Pin O	Input 2	red/blue	IN 1	Pin 11
Pin P	Input 3	white/green	IN 2	Pin 10
Pin R	Input 4	brown/green	IN 3	Pin 9

Ethernet-ID7 connection assignment



External view

Pin1	TX+
Pin 2	TX–
Pin 4	RX–
Pin 12	RX+

Connection of Profibus-DP-ID7

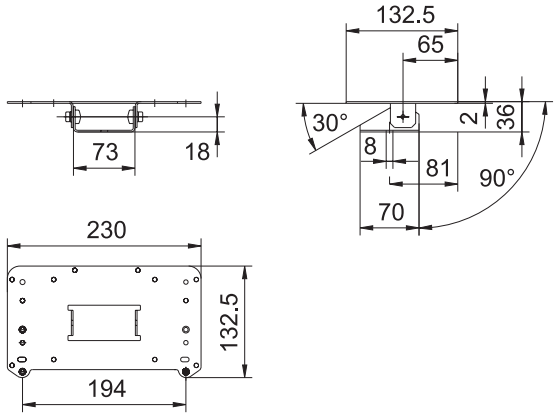
When installing the Profibus-DP-ID7 field bus card in the ID7xx, please note the following:

- ▲ Only use special bus cables with shielding and with a diameter ≥ 7 mm. Recommended wire cross-section ≥ 0.34 mm^2.
- ▲ Cable glands must be tightened so that a strain relief ≥ 100 N is ensured.

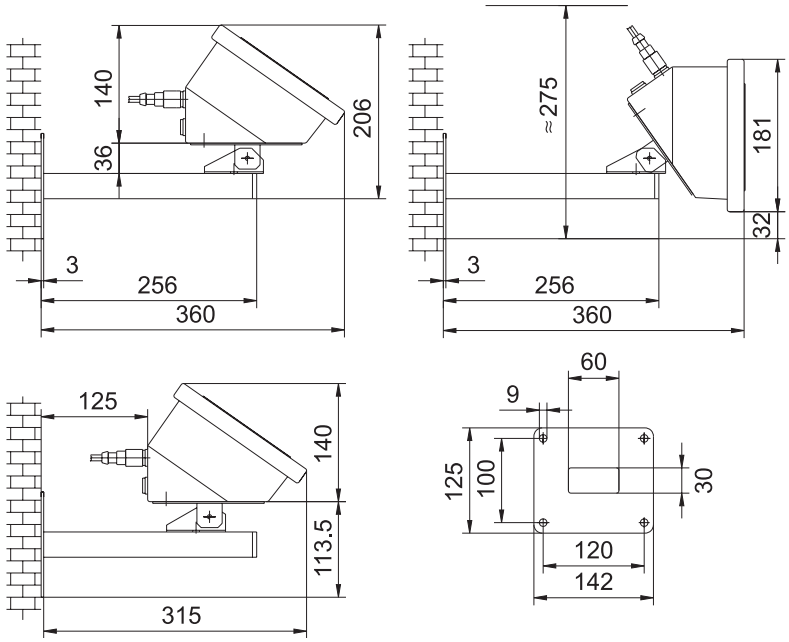
9.4 Dimensions stands and brackets

Stand adapter 00 207 294

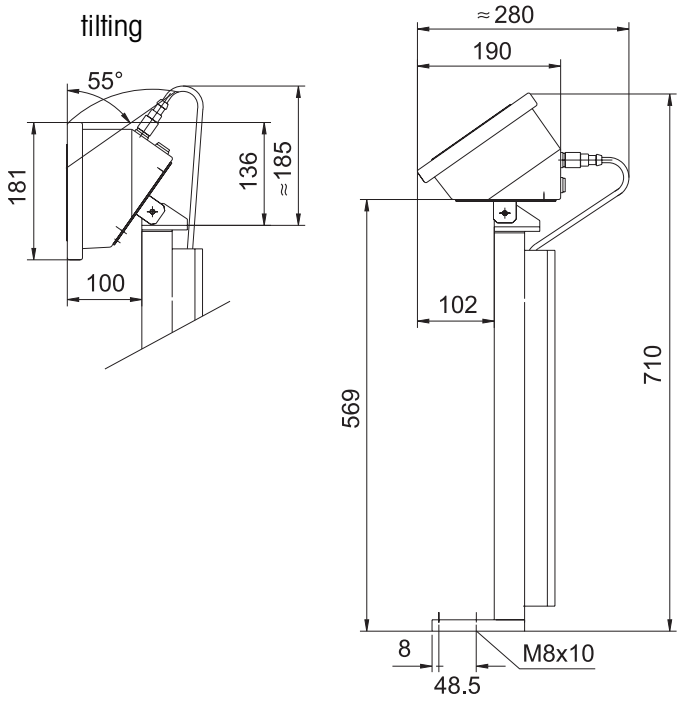
- tilting, with continuously adjustable universal joint



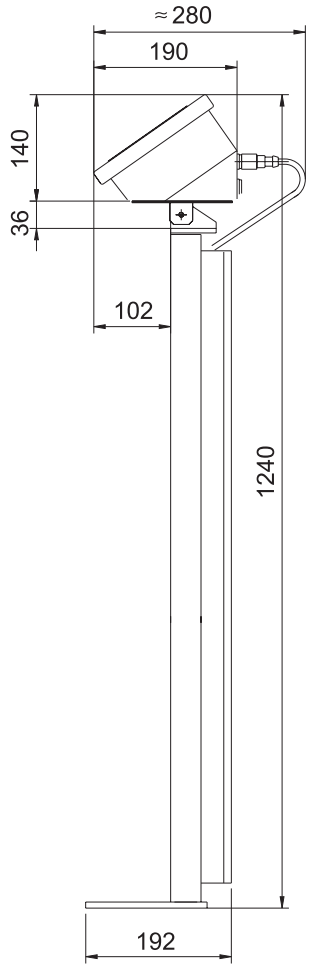
Wall bracket
00 504 129 (black, plastic-coated) / 00 504 130 (completely rust-proof)

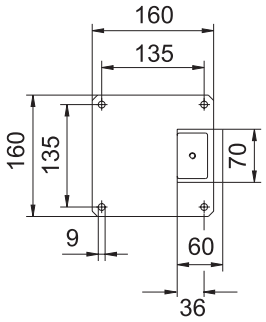


Bracket stand
00 504 127 (black, plastic-coated)
00 504 128 (completely rust-proof)



Floor stand
00 504 131 (black, plastic-coated)
00 504 132 (completely rust-proof)





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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