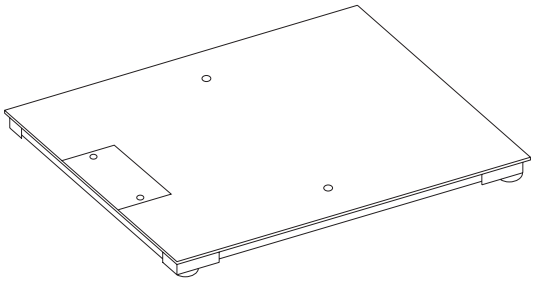
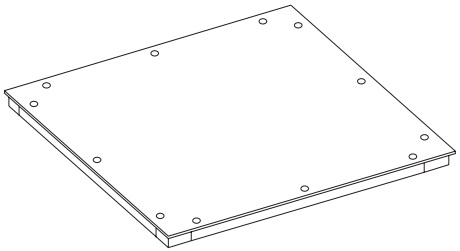
Operating Instructions
Installation Information

METTLER TOLEDO

METTLER TOLEDO MultiRange
Weighing Platforms PFA574 / PFA575(x) / PFA579(x)





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Content

1. General information

These operating instructions and installation information contain all the information on the installation, commissioning and operation of the following weighing platforms:

- PFA574 as a coated design for use in a safe area
- PFA575 as a hot-galvanised design
  approved for use in safe areas and in hazardous areas of Zones 2/22
- PFA575x as a hot-galvanised design
  approved for use in hazardous areas of Zones 1/21
- PFA579 as a stainless version
  approved for use in safe areas and in hazardous areas of Zones 2/22
- PFA579x as a stainless version
  approved for use in hazardous areas of Zones 1/21

The weighing platforms are available with an analog scale interface or a digital IDNet scale interface.

Information about maintenance, troubleshooting and repairs are contained in the Service Manual ME-22015835.

2. Safety instructions

2.1 Safety instructions for PFA574 (coated)

▲ Do not work in hazardous areas!

2.2 Safety instructions for PFA575(x) (hot-galvanised) / PFA579(x) (stainless steel)

There is an increased risk of injury and damage when the weighing platforms are used in hazardous areas! Special care must be taken when working in such hazardous areas. The rules for behaviour are based on the concept of "Safe Distribution" established by METTLER TOLEDO.

Competence

▲ The weighing platforms PFA575(x) / PFA579(x) may only be installed, maintained and repaired by authorised METTLER TOLEDO service personnel.

Ex approval

▲ No modifications may be made to the device and no repair work may be performed on the modules. Any weighing cells or system modules that are used must comply with the specifications contained in the installation instructions. Non-compliant equipment jeopardises the intrinsic safety of the system, cancels the "Ex" approval and renders any warranty or product liability claims null and void.

▲ The safety of the weighing system 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 and weighing cells
- the regulations and standards in the respective country
- the applicable statutory requirements for electrical equipment installed in hazardous atmospheres in the respective country
- all instructions related to safety issued by the owner

▲ 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 in a hazardous area.

▲ Do not use protective coverings for the devices.

▲ Avoid damage to the system components.

Installation

▲ Only install and perform maintenance work on the weighing system in the hazardous areas if the following conditions are fulfilled:
- if the intrinsically safe characteristic values and zone approval of the individual components are in accord with one another
- the owner has issued a permit ("spark permit" or "fire permit")
- the area has been rendered safe and the owner's safety co-ordinator has confirmed that there is no danger
- the necessary tools and any required protective clothing are provided (danger of the build-up of static electricity)

▲ The certification papers (certificates, manufacturer's declarations) must be present.

▲ Lay cables in such a way that they are protected from damage.

▲ Only route cables into the housing of the system modules via the suitable cable coupler and ensure proper seating of the seals.

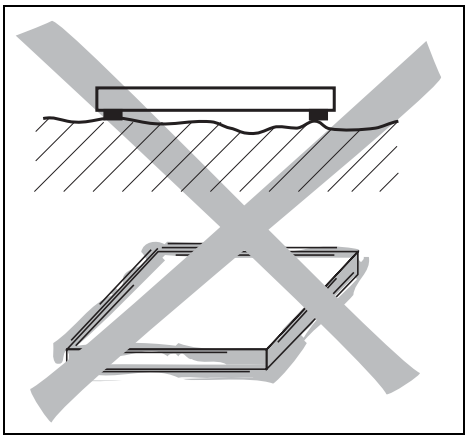
Additional requirements for Category 3 (Zone 2/22)

▲ The explosion-protected weighing platform PFA575 / PFA579 may only be operated in Zone 2 and 22 hazardous areas in conjunction with weighing terminals that have a corresponding approval and interface specification.

▲ The connection cable may not be separated from the weighing terminal while it is energised.

▲ Tighten the knurled nut of the IDNet connecting cable with 10 Nm.

3. Preparation



3.1 Selecting installation location

▲ The underground at the installation location must be capable of safely supporting the weight of the weighing platform at its support points when it carries the maximum load. At the same time it should be so stable that no vibrations arise during weighing work. These requirements also apply when the weighing platform is integrated in conveying systems and the like.

▲ Ensure that vibrations from machines near the installation site are kept to a minimum.

Ambient conditions PFA574 (coated)

➜ Use weighing platforms only in a dry environment.

Ambient conditions PFA575(x) (hot-galvanised) / PFA579(x) (stainless steel)

➜ Use weighing platforms in a dry environment or in a humid environment.

3.2 Unpacking

The scope of delivery of weighing platform and accessories encompasses the following parts:

PFA574	**PFA575(x)**	**PFA579(x)**
4 rubber retainer plates 1 set of eye bolts 1 operating instructions 1 set of labels 1 Declaration of conformity 1 Level	4 rubber retainer plates 1 operating instructions 1 set of labels 1 Declaration of conformity 1 Level	4 rubber retainer plates 1 operating instructions 1 set of labels 1 universal oil 1 Declaration of conformity 1 Level
PFA57.(x) IDNet option additionally: 1 Identcard		
Installation frame 8 dowels		

➜ Remove all the parts of the packaging.

4. Equipotential bonding (for Category 2/3)

The equipotential bonding must be installed by a professional electrician when using the weighing platforms PFA575(x) / PFA579(x) in hazardous areas. METTLER TOLEDO Service only has a monitoring and consulting function here.

The equipotential bonding terminal is positioned at the terminal box of the weighing platform.

➜ Connect equipotential bonding of all devices (weighing platform, service terminal) in accordance with the country-specific regulations and standards. In the process it must be ensured that
  - all the device housings are connected to the same potential via the equipotential bonding terminals,
  - no circulating current flows via the cable shielding for intrinsically safe circuits,
  - the neutral point for equipotential bonding is as close to the weighing system as possible.

5. Safety-specific characteristic values

5.1 Ignition protection type PFA575(x) / PFA579(x)

	Category 3	Category 2
Weighing cells	**Weighing cell SBH** II 2GD T 50 °C EEx ib IIC T4 **Weighing cell THC** II 2G EEx nA IIC T6 II 2D IP68 T 80 °C	**Weighing cell THC** II 2G EEx nA IIC T6 II 2D IP68 T 80 °C
Analog scale interface	**System solution Analog Ex2** II 3G Ex nA II T4 II 3D Ex tD A22 IP65 T 75 °C BVS 08 ATEX E 063	**Analog Ex1** II 2G EEx ia IIC T4 II 2D IP68 T 75 °C BVS 04 ATEX E221
	System component Analog Ex2 II 3G Ex nA II T4 II 3D Ex tD A22 IP68 T 75 °C BVS 08 ATEX E 063	
Digital scale interface (IDNet)	**Point type system solution** II 3G Ex nA II T4 $-10\ °C \leq T_a \leq +40\ °C$ II 3D Ex tD A22 IP67 T 75 °C BVS 06 ATEX 098	**Point Ex** II 2G EEx ia IIC T4 $-20\ °C \leq T_a \leq +60\ °C$ II 2 D IP68 T 75 °C BVS 03 ATEX E 432

5.2 Safety-specific characteristic values for the terminal

The following safety-specific characteristic values have to be ensured by the connected weighing terminal:

- Digital scales interface (IDNet, Category 3)
  Supply circuit $U_{max} \leq 20$ VDC
  Interface current $U_{max,a} \leq 27$ VDC $I_{max,a} \leq 30$ mA
- Analog scales interface (Category 3)
  Supply circuit $U_{imax} \leq 20$ VDC $U_o = U_i$
  $P_{imax} \leq 20$ W $P_o = P_i$

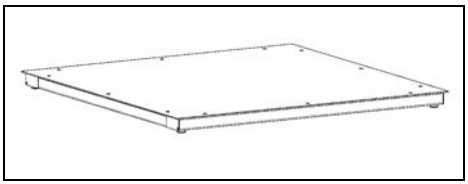
6. Setting up

Note

For a **non-certifiable** application the weighing platform can be operated without ramp or without corner plates, see variant 6.1.

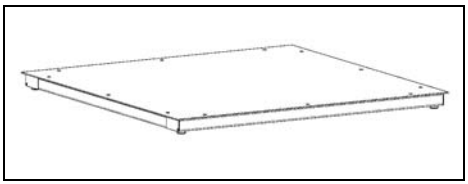
For a **certifiable** application the weighing platform must be fastened to the floor or be equipped with a level indicator, see variants 6.2 to 6.6.

6.1 Above-floor installation without ramp and without floor fastening (non-certifiable)



1. Set up the weighing platform at a suitable location with a level underground.
2. Apply antiskid rubber retainer plates to the levelling feet.

6.2 Above-floor installation without ramp and without floor fastening with level indicator (certifiable)

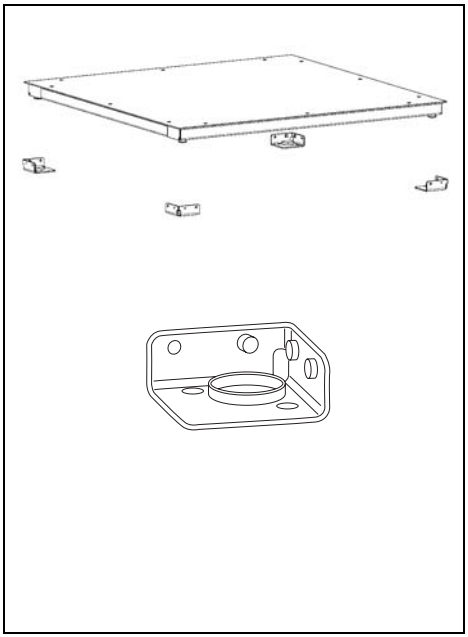


1. Install the weighing platform at a suitable location with a level foundation.
2. Mount anti-skid rubber receiver plates on the levelling feet.
3. Level the weighing platform using the level indicator.

Note

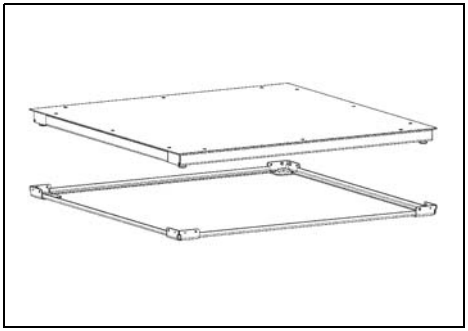
If the scale is used with a pit installation frame, the level indicator has to be removed.

6.3 Above-floor setting up with corner plates



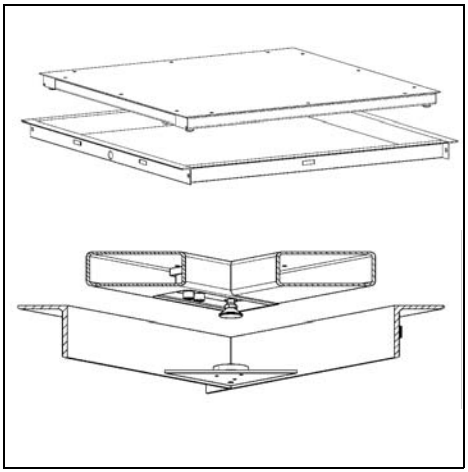
1. Set up the corner plates at a suitable location with a level underground.
2. Place the weighing platform in the corner plates.
3. Align the position of the corner plates. To this purpose check the gap between the corner plate and the load frame. The levelling feet may not be distorted.
4. Mark the position of the corner plates and lift the weighing platform out of the corner plates.
5. Mark the drill positions for the corner plates and drill dowel-holes.
6. Fasten the corner plates to the floor using dowels.
7. Insert the weighing platform in the corner plates.

6.4 Above-floor setting up with installation frame



1. Set up the installation frame at a suitable location with a level underground.
2. Mark the drill position for the installation frame.
3. Drill dowel-holes. Suck off any dirt particles.
4. Insert the weighing platform in the installation frame.

6.5 Pit installation



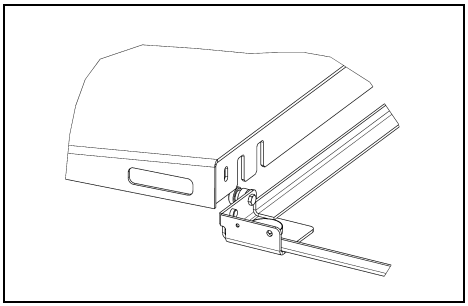
All the mounting and installation aids as well as a detailed documentation for making the pit correctly are supplied with the Quick Pit PFA.

1. Insert the weighing platform into the Quick Pit PFA.
2. Insert the connecting cable to the terminal through the holes in the Quick Pit PFA and through the empty conduit.

Note

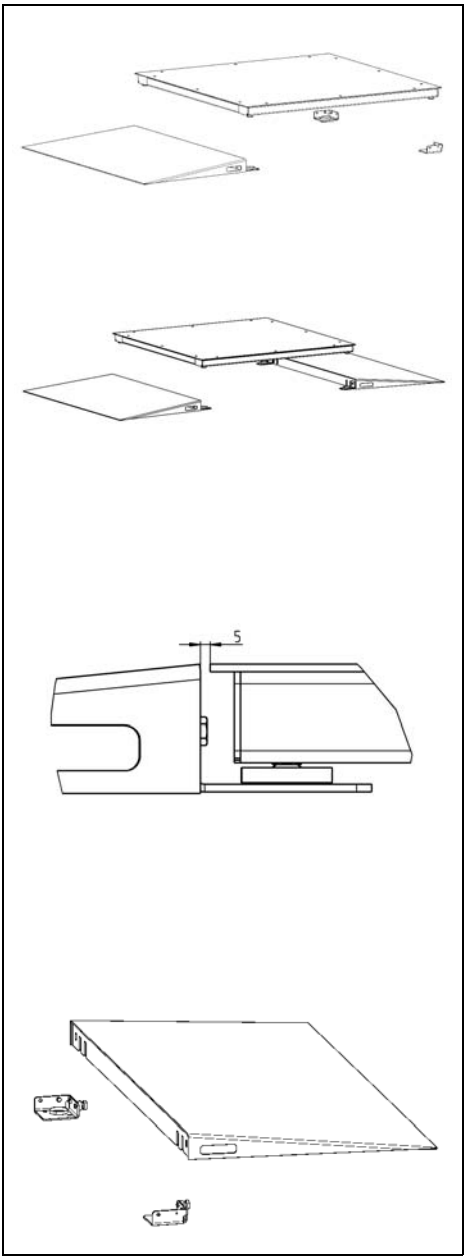
If the scale is used with a pit installation frame, the level indicator has to be removed. Observe the label on the load frame.

6.6 Above-floor setting up with access ramp



Installation **with installation frame:**

1. Screw the hanger pins into the installation frame.
2. Engage the access ramp into the installation frame.



Installation **with fastening brackets.**

1. Connect the access ramp to the supplied fastening brackets.
2. Set up 1 access ramp and 1 corner plate set (2 piece) or 2 access ramps at a suitable location with level underground.
3. Place the weighing platform.
4. Align the position of the access ramps(s) and, if applicable, the corner plates. To this purpose check the gap between the access ramp or corner plate and the load frame. The levelling feet may not be distorted.
5. Lift the weighing platform out again. The access ramp(s) and corner plates may not be moved in the process.
6. Mark the drill positions of the access ramps(s) and, if applicable, the corner plates.
7. Drill dowel-holes. Suck off any dirt particles.
8. Fasten the access ramp(s) and, if applicable, the corner plates with heavy-duty dowels to the floor.
9. Insert the weighing platform again.

Installation **with corner plates:**

1. Screw the hanger pins into the corner plates.
2. Mount the weighing platforms with corner plates, see Section 6.2.
3. Engage the access ramp at the corner plates.

6.7 Aligning the weighing platform and laying the cable

1. Align the weighing platform horizontally using the adjustable levelling feet.
2. Lay the connecting cable to the terminal so that it is protected against damage.

7. Commissioning

Weighing platforms with analog scale interface

Terminal	Colour	
	PFA574 PFA575 PFA579	PFA575x PFA579x
EXC+	grey	grey
SEN+	yellow	yellow
SIG+	white	white
SIG–	brown	brown
SEN–	green	green
EXC–	blue	pink

Weighing platforms with an analog scale interface can be connected to weighing terminals with an integrated A/D converter.

When used in hazardous locations ensure that cable glands suitable for hazardous locations are used.

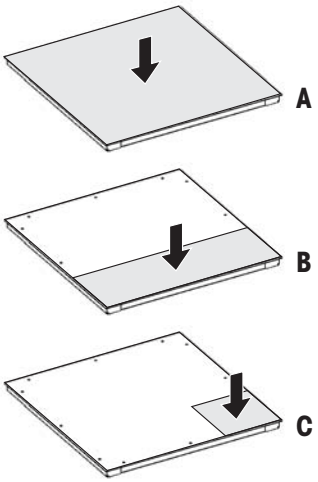
1. Connect the weighing platform to the weighing terminal in accordance with the adjacent table.
2. Route the connecting cable so that it is protected from damage.

Weighing platforms with IDNet interface

Weighing platforms with an IDNet interface can be connected to all weighing terminals with an IDNet connection.

➜ Route the connecting cable so that it is protected from damage.

8. Operating limits



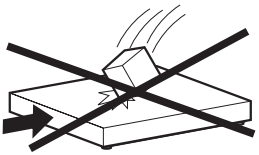
A with centred load
B with load on side
C with one-sided corner load

The weighing platforms are designed extremely robustly. However, the load limits in the following table may not be exceeded.

Depending on the type of load bearing, the static bearing, i.e. the maximum permissible load, amounts to:

Maximum permissible load in kg

	A	B	C
PFA57... 300	1500	900	450
PFA57... 600 **PFA57.G/FH 1500/3000**	3500	2300	1150
PFA57.DS/D/E/ES/FL/FM 1500/3000	4500	3000	1500



➜ Avoid falling loads, shock loads as well as impacts from the side.

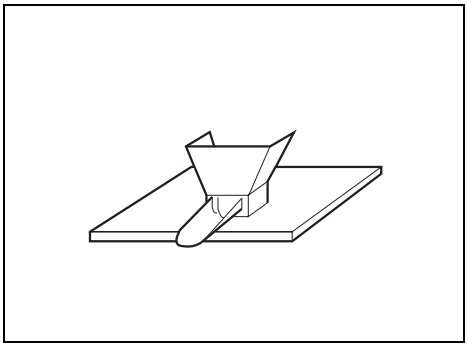
Operation with access ramps

- The load plate of the weighing platform is an active weighing component. The access ramps are passive. This means that during the weighing process all the wheels of the transport vehicles have to be on the load plate.
- The air gap between the load plate and the access ramps has to be free. The gap should therefore be inspected regularly and kept free, in particular during the weighing of granular or small-scale material.

9. Planning assemblies

The following points are to be observed when planning assemblies:

- Moving or rotating parts on the weighing platform must be designed so that they do not affect the weighing result. Rotating parts must be balanced.
- The load frame must be free on all sides so that no connection is established between the load frame and installation frame, Quick Pit PFA, access ramps or corner plates, even by falling parts or dirt deposits.
- Cables or hoses between the weighing platform and other machine parts must be laid so that they do not exert any force on the weighing platform.
- When mounting assemblies, make sure that no metal chips get into the gap between the DMS weighing cell and the load frame. Clean the gap after completing mounting.



Preload range

The weight of the structural parts permanently mounted onto the weighing platform is referred to as preload.

If the preload exceeds the zero set range, the weighing platform has to be electrically compensated so that the full weighing range is available.

The zero-set range and the zero adjustment range must lie within the maximum preload.

Weighing range		Preload
300 kg		400 kg
600 kg		1400 kg
	at 3 x 3000 e MR:	120 kg
1500 kg		2500 kg
	at 3 x 3000 e MR:	500 kg
3000 kg		1200 kg
	PFA57.-G/FH	500 kg

10. Scale configuration

Ex works the scale is configured with a resolution of 1 x 3000 e (standard). The corresponding measuring data sign has to be provided to the ID card.

Possible configurations

		Standard	Options		
Weighing platform	**Maximum load**	**1 x 3000 e SR**	**2 x 3000 e MR/MI**	**3 x 3000 e MR**	**1 x 6000 e SR**
PFA57..DS/FL	300 kg	0.1 kg	0.05 / 0.1 kg	–	0.05 kg
	600 kg	0.2 kg	0.1 / 0.2 kg	0.05 / 0.1 / 0.2 kg	0.1 kg
	1200 kg	–	–	–	0.2 kg
	1500 kg	0.5 kg	0.2 / 0.5 kg	0.1 / 0.2 / 0.5 kg	–
PFA57..D/E/ ES/G/FM/FH	300 kg	0.1 kg	0.05 / 0.1 kg	–	0.05 kg
	600 kg	0.2 kg	0.1 / 0.2 kg	0.05 / 0.1 / 0.2 kg	0.1 kg
	1200 kg	–	–	–	0.2 kg
	1500 kg	0.5 kg	0.2 / 0.5 kg	0.1 / 0.2 / 0.5 kg	–
	3000 kg	1.0 kg	0.5 / 1.0 kg	0.2 / 0.5 / 1.0 kg	0.5 kg

SR Single Range

MR Multi Range

MI Multi Interval

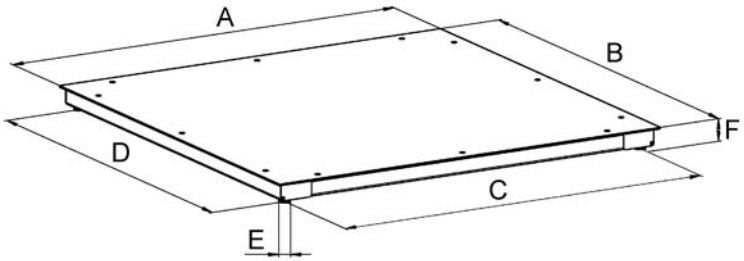
Notes

- If the configuration is changed, the new measuring data sign has to be affixed to the ID card.
- Further variants can be configured at weighing platforms with an IDNet interface in Service mode, see the Service Manual A/D Converter Point 22004255.

11. Dimensional drawings

11.1 Dimensions

Weighing platforms

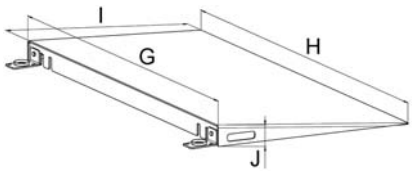


Dimensions in mm

	A	B	C	D	E	F*
PFA57.-DS	1000	1000	899	899	Ø 40	80
PFA57.-D	1250	1000	1149	899	Ø 40	80
PFA57.-E	1500	1250	1399	1149	Ø 40	80
PFA57.-ES	1500	1500	1399	1399	Ø 40	80
PFA57.-G	2000	1500	1899	1399	Ø 40	80
PFA57.-FL	700–1000	400–1000	A–101	B–101	Ø 40	80
PFA57.-FM	1000–1500	1000–1500	A–101	B–101	Ø 40	80
PFA57.-FH	1500–2000	1500	A–101	B–101	Ø 40	80

* Without installation frame

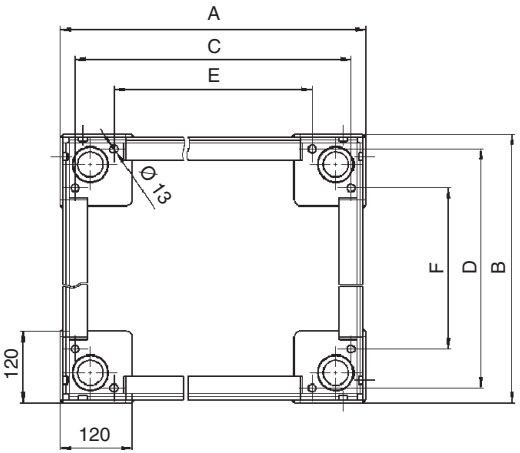
Access ramps



Dimensions in mm

Width	Dimension			
	G	H	I	J
1000	1000	1150	830	85
1250	1250	1400	830	85
1500	1500	1650	830	85
up to 1000	400–1000	G+150	830	85
up to 1500	1000–1500	G+150	830	85

Installation frame and corner plates

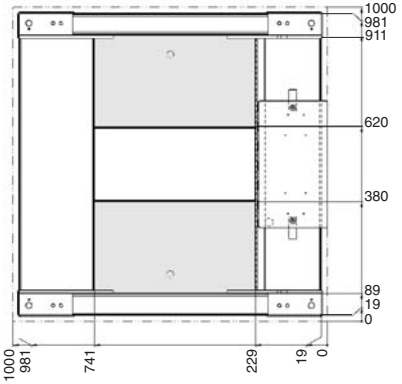


Dimensions in mm

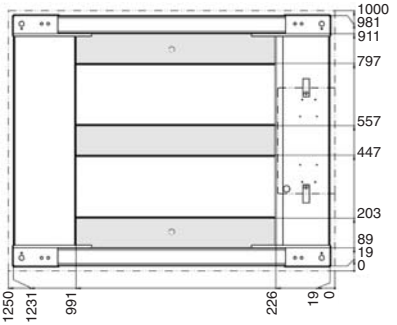
	A	B	C	D	E	F
PFA57.-DS	1000	1000	950	950	820	820
PFA57.-D	1250	1000	1200	950	1070	820
PFA57.-E	1500	1250	1450	1200	1320	1070
PFA57.-ES	1500	1500	1450	1450	1320	1320
PFA57.-G	2000	1500	1950	1450	1820	1320
PFA57.-FL	700–1000	400–1000	A–50	B–50	A–180	B–180
PFA57.-FM	1000–1500	1000–1500	A–50	B–50	A–180	B–180
PFA57.-FH	1500–2000	1500	A–50	B–50	A–180	B–180

11.2 Mounting possibilities PFA574

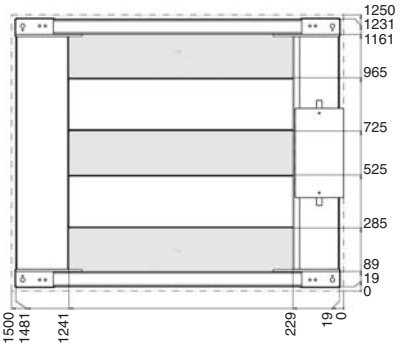
PFA574-DS



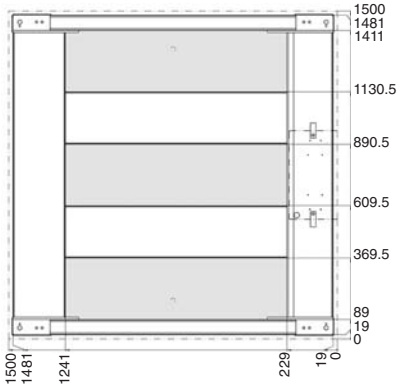
PFA574-D



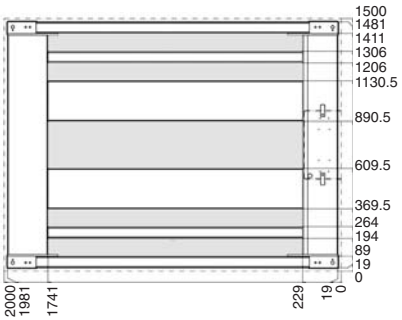
PFA574-E



PFA574-ES



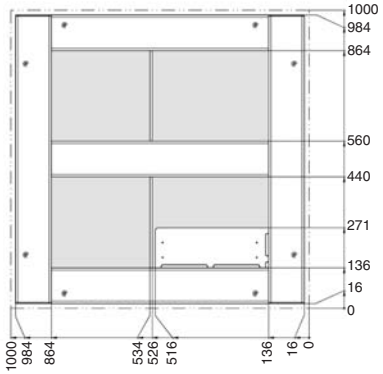
PFA574-G



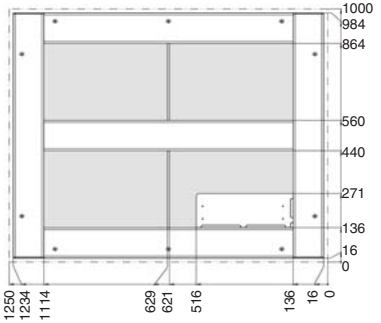
Opening/mounting possibilities are shown in grey.

11.3 Mounting possibilities PFA575(x) / PFA579(x)

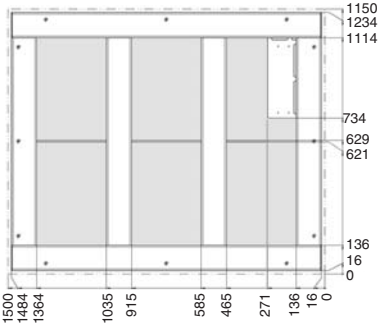
PFA575-DS



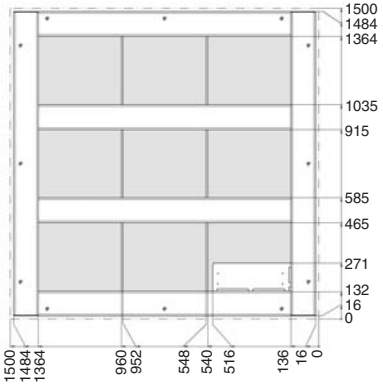
PFA575-D



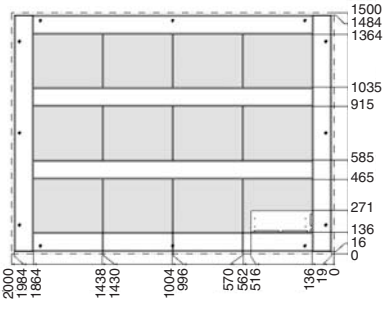
PFA575-E



PFA575-ES



PFA575-G



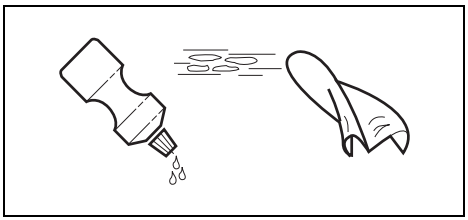
Opening/mounting possibilities are shown in grey.

12. Cleaning the weighing platform

Maintenance of the weighing platform is limited to regular cleaning. The procedure depends on the type of surface and on the ambient conditions prevalent at the installation site.

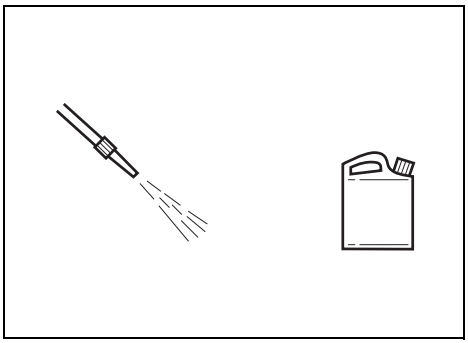
Cleaning agents

➜ Only use disinfectants and cleaning agents in accordance with the manufacturer's instructions!



Cleaning in a dry environment PFA574

- Wiping with a damp cloth
- Common household cleaning agents

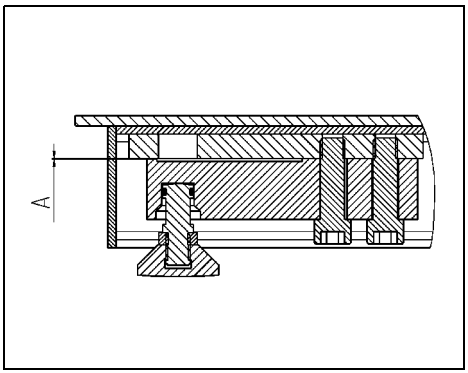


Cleaning in a wet environment PFA575(x)

- Water jet up to 60 °C
- Common household cleaning agents

PFA579(x)

- Water jet up to 60 °C
- Ensure that corrosive substances are removed at regular intervals
- Treat with the enclosed universal oil if necessary

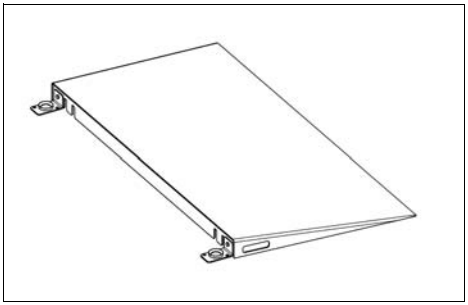


Cleaning the interior

- Remove dirt and deposits in the interior of the weighing platform when required. Lift the weighing platform for this purpose.
- Use compressed air to remove dirt particles from the gap (A) between the overload protection of the load sensor and the load frame of the weighing platform.
- Grease the retainer and O-rings of the levelling foot if required.

13. Standard accessories

Access ramp



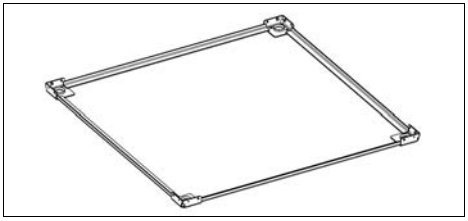
Order example access ramp

Hot-galvanised | Width 1250 mm | corrugated surface

22 016 726 + 22 016 730

		Basic model: smooth surface	Option: corrugated surface	Option: ground
Black coated, for PFA574	Width 1000 mm Width 1250 mm Width 1500 mm Width <1000 mm Width >1000 mm	22 016 719 22 016 720 22 016 721 22 016 722 22 016 723	22 016 724	–
Hot-galvanised, for PFA575(x)	Width 1000 mm Width 1250 mm Width 1500 mm Width <1000 mm Width >1000 mm	22 016 725 22 016 726 22 016 727 22 016 728 22 016 729	22 016 730	–
Stainless steel AISI304, for PFA575(x), PFA579(x)	Width 1000 mm Width 1250 mm Width 1500 mm Width <1000 mm Width >1000 mm	22 016 731 22 016 732 22 016 733 22 016 734 22 016 735	22 016 736	RA < 1µm 22 019 491
Stainless steel AISI316, for PFA579(x)	Width 1000 mm Width 1250 mm Width 1500 mm Width <1000 mm Width >1000 mm	22 019 481 22 019 482 22 019 483 22 019 484 22 019 485	22 019 448	RA < 1µm 22 019 491

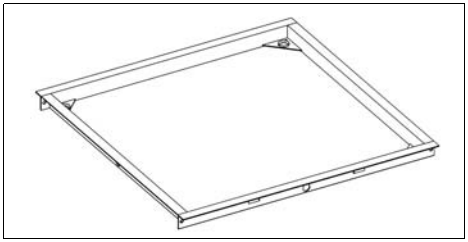
Installation frame



Black coated, PFA574	
Size DS	22 016 649
Size D	22 016 650
Size E	22 016 651
Size ES	22 016 652
Size G	22 016 653
Size FL	22 016 654
Size FM	22 016 655
Size FH	22 016 656
Stainless steel AISI 304/V2A, PFA579(x)	
Size DS	22 019 457
Size D	22 019 458
Size E	22 019 459
Size ES	22 019 460
Size G	22 019 461
Size FL	22 019 462
Size FM	22 019 463
Size FH	22 019 464

Hot-galvanised, PFA575(x)	
Size DS	22 016 677
Size D	22 016 678
Size E	22 016 679
Size ES	22 016 680
Size G	22 016 681
Size FL	22 016 682
Size FM	22 016 683
Size FH	22 016 684
Stainless steel AISI 316/V4A, PFA579(x)	
Size DS	22 019 465
Size D	22 019 466
Size E	22 019 467
Size ES	22 019 468
Size G	22 019 469
Size FL	22 019 470
Size FM	22 019 471
Size FH	22 019 472

Quick Pit PFA

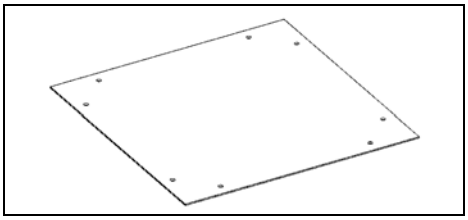


Hot-galvanised, mounted completely, PFA574 / PFA575(x)	
Size DS	22 016 685
Size D	22 016 686
Size E	22 016 687
Size ES	22 016 688
Size G	22 016 689
Size FL	22 016 690
Size FM	22 016 691
Size FH	22 016 692

Stainless steel AISI316/V4A, mounted completely, PFA579(x)	
Size DS	22 019 473
Size D	22 019 474
Size E	22 019 475
Size ES	22 019 476
Size G	22 019 477
Size FL	22 019 478
Size FM	22 019 479
Size FH	22 019 480

Stainless steel, mounted completely, PFA575(x) / PFA579(x)	
Size DS	22 016 693
Size D	22 016 694
Size E	22 016 695
Size ES	22 016 696
Size G	22 016 697
Size FL	22 016 698
Size FM	22 016 699
Size FH	22 016 700

Load plate PFA575(x) / PFA579(x)



Order No. 22 016 704

Caution

An option number that depends on the size and surface has to be specified additionally, see the following table.

Surface	PFA575 hot-galvanised		PFA575(x) / PFA579(x) Stainless steel AISI304/V2A	
	smooth	corrugated	smooth	corrugated
Size DS	22 016 569	22 016 577	22 016 585	22 016 593
Size D	22 016 570	22 016 578	22 016 586	22 016 594
Size E	22 016 571	22 016 579	22 016 587	22 016 595
Size ES	22 016 572	22 016 580	22 016 588	22 016 596
Size G	22 016 573	22 016 581	22 016 589	22 016 597

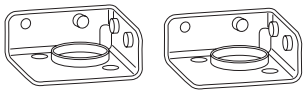
Surface	PFA579(x) Rostfrei AISI316/V4A	
	smooth	ground
Size DS	22 019 408	22 019 416
Size D	22 019 409	22 019 417
Size E	22 019 410	22 019 418
Size ES	22 019 411	22 019 419
Size G	22 019 412	22 019 420

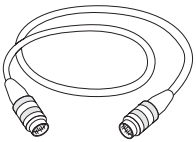
Order example load plate

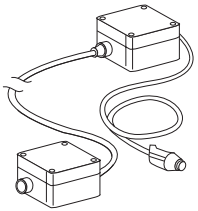
Load plate + desired surface (PFA575 hot-galvanised smooth)

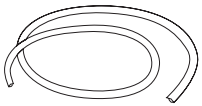
22 016 704 + 22 016 569

Further accessories









	Order No.
Corner plates	
Set consisting of 2 pieces	
coated	22 016 701
hot-galvanised	22 016 702
stainless steel AISI304/V2A	22 016 703
stainless steel AISI316/V4A	22 019 492
Connecting extension cable 10 m long, pluggable on both ends, for remote control of the IDNet terminal	00 504 134
Connecting set for IDNet terminals for progressive extension of the connecting cable to 100 m, consisting of two terminal boxes, box at terminal end with connecting cable 2.5 m long	00 504 133
Special cable from the roll 100 m, in connection with the connecting set for progressive extension of the connecting cable for IDNet terminals	00 504 177

14. Disposal

In accordance with the requirements of the European Directive 2002/96 EC about Waste Electrical and Electronic Equipment (WEEE) this equipment may not be disposed of in the household refuse.
This applies correspondingly for countries outside the EC in accordance with the applicable national regulations.

➜ Please dispose of this product in accordance with the local regulations in a separate collection for electrical and electronic equipment.

Should you have any questions, please contact the responsible authorities or the dealer from whom you purchased this equipment.
If this equipment is passed on (for example for private or commercial/ industrial further use), this specification has to be passed on correspondingly as well.
Many thanks for your contribution to protecting the environment.

ServiceXXL

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METTLER TOLEDO products stand for highest quality and precision. Careful handling in accordance with these operating instructions as well as regular maintenance and inspection by our professional customer service ensure the long and reliable function and maintenance of value of your measuring instruments. Our experienced service team will be pleased to inform you about corresponding service agreements or calibration services.

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