

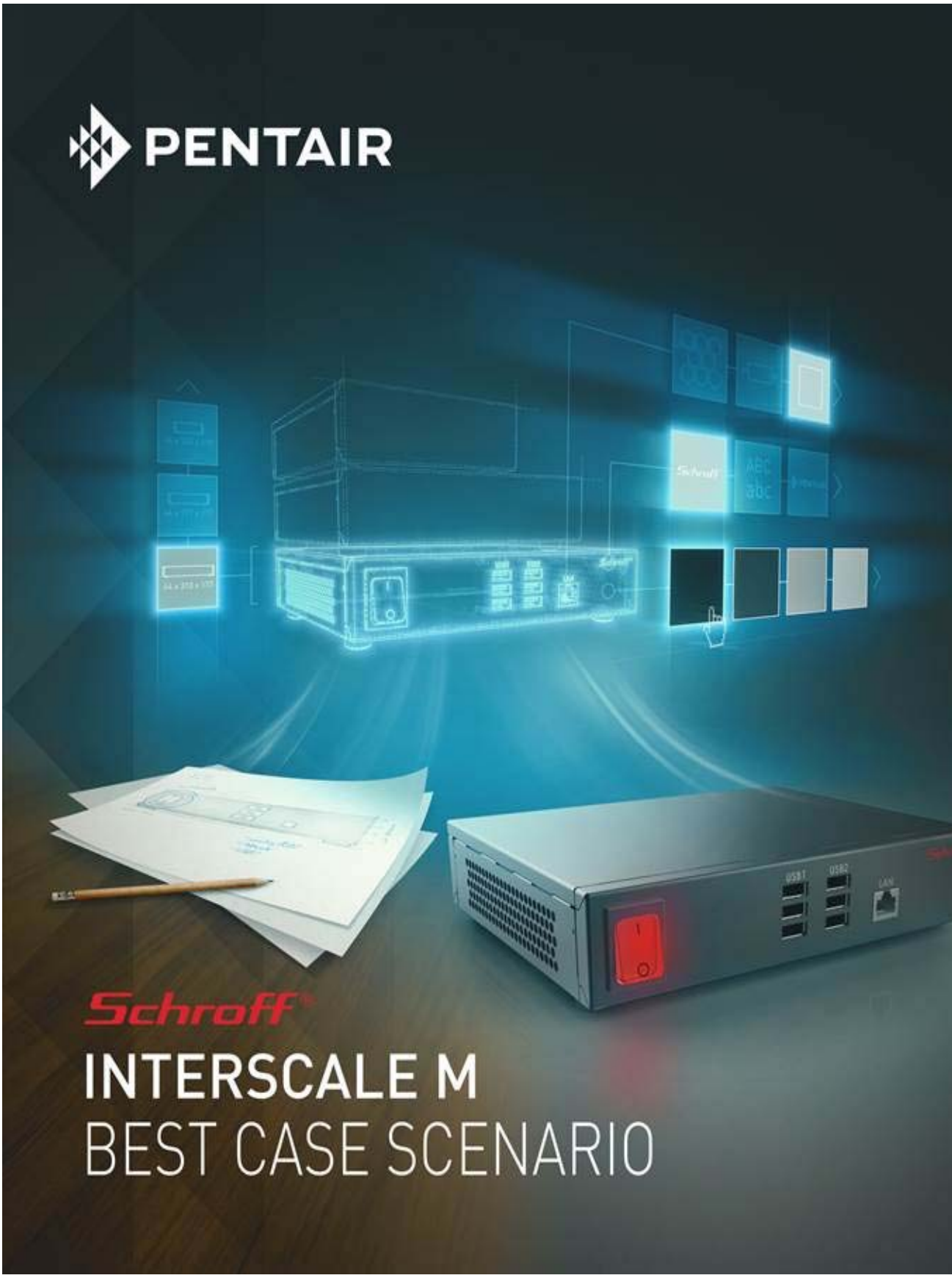
Schroff®

MAIN CATALOG

PENTAIR ELETRONICS PROTECTION | 24TH EDITION | January 2014

05 Electronics Cases - Interscale M

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Downloads and additional important information can be found on the Internet under www.schroff.biz

Interscale M - Best Case Scenario
Flexible cases for standardized and non-standardized PCBs

- The innovative case design inspires and supports you in realizing your ideas - from initial prototypes to series production.
- The intelligent platform and extensive accessories let you create optimized case solutions quickly and easily and allows for flexible adaptation them flexibly to suit specific requirements. You have the option between making such adaptations yourself or with our support.
- In addition to its free scalability, Interscale M offers built-in EM protection and ease of mechanical processing.
- 3 service levels are available for Interscale M desktop cases and 19" cases:
  - Standard: 21 plain, 19 perforated case dimensions available from stock within 48 hours
  - Modified: Platform-based modification (color, printing and cut-outs) to standard case
  - Customized: Project-specific implementation of individual customer requirements



02613004

Standard case

- 21 case dimensions
  - height 44, 88, 133 mm (1, 2, 3 U)
  - width 133, 221, 310, 399 mm, 19"
  - depth 133, 177, 221, 310 mm
- Case with solid side panels or perforated side panels on both sides for forced cooling
- Color anthracite gray (RAL 7016)
- Suitable accessories for all standard sizes



02613001

Modified cases

- All 21 case dimensions can be individualized with defined modification options
- Flat-rate price for colors, cut-outs and printing
- Single quantity orders accepted, ready to ship within 5 working days



02613007

Customized cases

- The size of the case can be modified to exact customer requirements
- Extended color palette available for case
- Unusual cut-outs and printing can be provided on front and rear
- Special accessories available on request

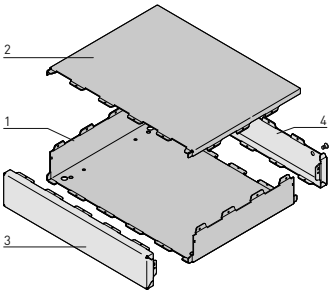
Interscale M standard case
Desktop cases 5.122
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Desktop cases

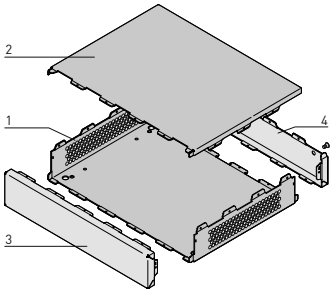


02613002



02613050

Plain case



02613051

Perforated case

- Modular desktop case consisting of 4 assembled parts
- Case available in two versions: Plain or perforated for forced cooling with fans
- Ingress protection IP 30 (plain version)
- Color RAL 7016

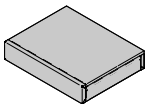
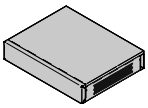
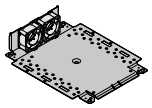
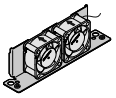
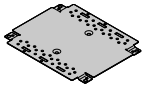
NEW

Delivery includes (assembled)

Item	Qty	Description
1	1	Base with 2 side panels (plain or perforated), St, 1 mm, AlZn coated, RAL 7016 (anthracite gray)
2	1	Top cover, St, 1 mm, AlZn coated, RAL 7016
3	1	Front panel, Al, 1 mm, RAL 7016
4	1	Rear panel, Al, 1 mm, RAL 7016
5	1	Assembly kit and user manual

ServicePLUS see page 8.112

Order Information

Height		Width	Depth	Desktop case plain	Desktop case, perforated			Mounting plate	PCB support for mounting plate
					Desktop case perforated	Mounting plate with built-in fan Page 5.124	Fan holder with fans Page 5.125		
								Page 5.126	Page 5.126
									
U	mm	mm	mm	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.
1	44	133	133	14820-133	–	–	–	24822-033	24827-023
1	44	133	177	14820-134	–	–	–	24822-034	24827-024
1	44	221	177	14820-154	14825-154	24827-154	24828-104	24822-054	24827-024
1	44	221	221	14820-155	14825-155	24827-155	24828-105	24822-055	24827-025
1	44	310	221	14820-175	14825-175	24827-175	24828-105	24822-075	24827-025
1	44	399	221	14820-195	14825-195	24827-195	24828-105	24822-095	24827-025
1	44	399	310	14820-197	14825-197	24827-197	24828-107	24822-097	24827-027
2	88	221	177	14820-254	14825-254	24827-254	24828-204	24822-054	24827-024
2	88	221	221	14820-255	14825-255	24827-255	24828-205	24822-055	24827-025
2	88	310	221	14820-275	14825-275	24827-275	24828-205	24822-075	24827-025
2	88	399	221	14820-295	14825-295	24827-295	24828-205	24822-095	24827-025
2	88	399	310	14820-297	14825-297	24827-297	24828-207	24822-097	24827-027
3	133	310	221	14820-375	14825-375	24827-375	24828-305	24822-075	24827-025
3	133	399	221	14820-395	14825-395	24827-395	24828-305	24822-095	24827-025
3	133	399	310	14820-397	14825-397	24827-397	24828-307	24822-097	24827-027

Accessories	
Clip for horizontal rail mounting PU 2 pieces	24820-002
Adhesive base Height 5 mm, PU 10 pieces (adhesive base, screw, washer)	24827-005
Adhesive base Height 7 mm, PU 10 pieces (adhesive base, screw, washer)	24827-007
Adhesive base Height 9 mm, PU 10 pieces (adhesive base, screw, washer)	24827-009
Assembly tool plastic, with Torx T10 bit, 1 kit	24820-001
Plastic tip-up foot anthracite, similar to RAL 7016, 4 pieces	20603-002
Stacking aid anthracite, similar to RAL 7016, PA, UL 94 V-0, PU 4 pieces	20603-003
Plastic foot PC, UL 94 V-0, for material thickness 1 ... 3, PU 4 pieces	24820-004
Plastic foot PC, UL 94 V-0, for material thickness 1 ... 3, 1 piece (SPQ 50)	60224-009

Note

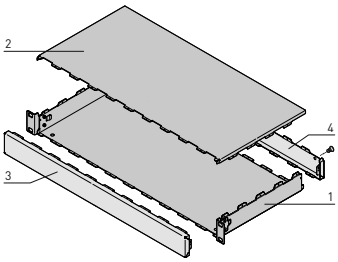
- Modified or customized cases on request

Part number in bold face type: ready for shipping within 2 working days
Part number in normal type: ready for shipping within 10 working days

19" cases

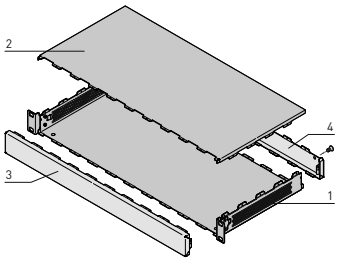


02613014



02613065

Plain case



02613066

Perforated case

- Modular 19" case consisting of 4 easy-to-assemble parts
- Case available in two versions: Plain or perforated for forced cooling with fans
- Ingress protection IP 30 (plain version)
- Color RAL 7016

NEW

Delivery includes

Item	Qty	Description
1	1	Base with 2 side panels (plain or perforated), St, 1 mm, AlZn coated, RAL 7016 (anthracite gray); 19"-angle, 1,5 mm St, AlZn coated, RAL 7016
2	1	Top cover, St, 1 mm, AlZn coated, RAL 7016
3	1	Front panel, Al, 1 mm, RAL 7016
4	1	Rear panel, Al, 1 mm, RAL 7016
5	1	Assembly kit and user manual

ServicePLUS see page 8.112

Order Information

Height		Width	Depth	19" case plain	19" case, perforated			Mounting plate	PCB support for mounting plate
					19" case perforated	Mounting plate with built-in fan Page 5.124	Fan holder with fans Page 5.125	Page 5.126	Page 5.126
U	mm	mm	mm	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.
1	44	444	221	14821-105	14826-105	24827-105	24828-105	24822-005	24827-025
1	44	444	310	14821-107	14826-107	24827-107	24828-107	24822-007	24827-027
2	88	444	221	14821-205	14826-205	24827-205	24828-205	24822-005	24827-025
2	88	444	310	14821-207	14826-207	24827-207	24828-207	24822-007	24827-027
3	133	444	221	14821-305	14826-305	24827-305	24828-305	24822-005	24827-025
3	133	444	310	14821-307	14826-307	24827-307	24828-307	24822-007	24827-027

Accessories	
Assembly tool plastic, with Torx T10 bit, 1 kit	24820-001
Adhesive base Height 5 mm, PU 10 pieces (adhesive base, screw, washer)	24827-005
Adhesive base Height 7 mm, PU 10 pieces (adhesive base, screw, washer)	24827-007
Adhesive base Height 9 mm, PU 10 pieces (adhesive base, screw, washer)	24827-009
Clip for horizontal rail mounting PU 2 pieces	24820-002

Note

- Modified or customized cases on request

Mounting plate with built-in fan holder and fans

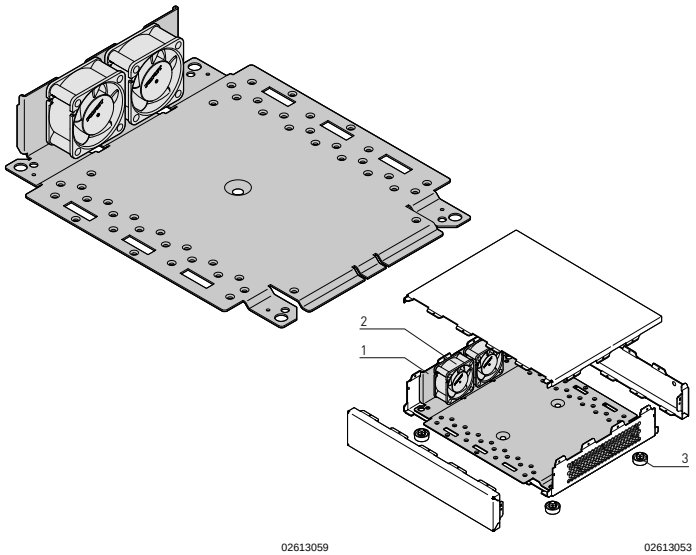


Illustration shows desktop case

- Mounting plate (raised 4 mm) with integrated fan holder including fan kit for perforated case versions
- Fans are simple to fit to the mounting plate using vibration-damping fixing material
- Mounting plate fixes into desktop case with 4 plastic feet or into 19" case with 4 screws

Delivery includes

Item	Qty	Description
1	1	Mounting plate with fan holder, St, 1 mm, AlZn coated
2		For fan size and quantity see Order Information
3a	4	Desktop cases: Plastic foot, PC, UL 94 V-0, black
3b	4	19" case (width 444 mm): Countersunk screw
4	1	Assembly kit and user manual

Order Information

	For case height		For case width	For case depth	Fan holder with fans					Part no.
					Height	Width	Depth	Fan dimensions	Number of fans	
	U	mm	mm	mm	mm	mm	mm	mm		
Desktop cases	1	44	221	177	41.15	214.95	173.00	40 x 40 x 20	2	24827-154
	1	44	221	221	41.15	214.95	217.45	40 x 40 x 20	3	24827-155
	1	44	310	221	41.15	303.85	217.45	40 x 40 x 20	3	24827-175
	1	44	399	221	41.15	392.75	217.45	40 x 40 x 20	3	24827-195
	1	44	399	310	41.15	392.75	306.35	40 x 40 x 20	5	24827-197
	2	88	221	177	85.60	214.95	173.00	80 x 80 x 25	1	24827-254
	2	88	221	221	85.60	214.95	217.45	80 x 80 x 25	1	24827-255
	2	88	310	221	85.60	303.85	217.45	80 x 80 x 25	1	24827-275
	2	88	399	221	85.60	392.75	217.45	80 x 80 x 25	1	24827-295
	2	88	399	310	85.60	392.75	306.35	80 x 80 x 25	2	24827-297
	3	133	310	221	130.05	303.85	217.45	119 x 119 x 25	1	24827-375
	3	133	399	221	130.05	392.75	217.45	119 x 119 x 25	1	24827-395
	3	133	399	310	130.05	392.75	306.35	119 x 119 x 25	2	24827-397
19" cases	1	44	444	221	41.15	437.20	217.45	40 x 40 x 20	3	24827-105
	1	44	444	310	41.15	437.20	306.35	40 x 40 x 20	5	24827-107
	2	88	444	221	85.60	437.20	217.45	80 x 80 x 25	1	24827-205
	2	88	444	310	85.60	437.20	306.35	80 x 80 x 25	2	24827-207
	3	133	444	221	130.05	437.20	217.45	119 x 119 x 25	1	24827-305
	3	133	444	310	130.05	437.20	306.35	119 x 119 x 25	2	24827-307

■ For technical data of fans see page 5.129

Fan holder with fans

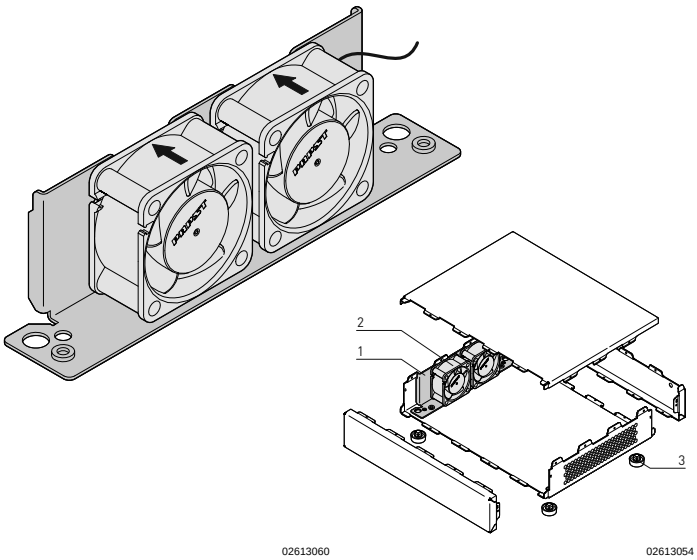


Illustration shows desktop case

- Fan holder for mounting on bottom of case
- Fans are simple to fit to the fan holder using vibration-damping fixing material
- Fan holders fix into desktop case with 2 plastic feet or into 19" case with 2 screws

Delivery includes

Item	Qty	Description
1	1	Fan holder with fan openings, St, 1 mm, AlZn coated
2		For fan size and number see Order Information
3a	4	Desktop cases: Plastic foot, PC, UL 94 V-0, black
3b	2	19" case (width 444 mm): Countersunk screw
4	1	Assembly kit and user manual

Order Information

	For case height		For case width	For case depth	Fan holder with fans					Part no.
					Height	Width	Depth	Fan dimensions	Number of fans	
	U	mm	mm	mm	mm	mm	mm	mm		
Desktop cases	1	44	221	177	41.15	28.50	145.00	40 x 40 x 20	2	24828-104
	1	44	221	221	41.15	28.50	189.45	40 x 40 x 20	3	24828-105
	1	44	310	221	41.15	28.50	189.45	40 x 40 x 20	3	24828-105
	1	44	399	221	41.15	28.50	189.45	40 x 40 x 20	3	24828-105
	1	44	399	310	41.15	28.50	278.35	40 x 40 x 20	5	24828-107
	2	88	221	177	85.60	31.00	145.00	80 x 80 x 25	1	24828-204
	2	88	221	221	85.60	31.00	189.45	80 x 80 x 25	1	24828-205
	2	88	310	221	85.60	31.00	189.45	80 x 80 x 25	1	24828-205
	2	88	399	221	85.60	31.00	189.45	80 x 80 x 25	1	24828-205
	2	88	399	310	85.60	31.00	278.35	80 x 80 x 25	2	24828-207
	3	133	310	221	130.05	31.00	189.45	119 x 119 x 25	1	24828-305
	3	133	399	221	130.05	31.00	189.45	119 x 119 x 25	1	24828-305
	3	133	399	310	130.05	31.00	278.35	119 x 119 x 25	2	24828-307
19" cases	1	44	444	221	41.15	28.50	189.45	40 x 40 x 20	3	24828-105
	1	44	444	310	41.15	28.50	278.35	40 x 40 x 20	5	24828-107
	2	88	444	221	85.60	31.00	189.45	80 x 80 x 25	1	24828-205
	2	88	444	310	85.60	31.00	278.35	80 x 80 x 25	2	24828-207
	3	133	444	221	130.05	31.00	189.45	119 x 119 x 25	1	24828-305
	3	133	444	310	130.05	31.00	278.35	119 x 119 x 25	2	24828-307

Note

- Fan holder cannot be used in conjunction with the mounting plate (instead use mounting plate with integrated fan holder)
- For technical data of fans see page 5.129

Mounting plate

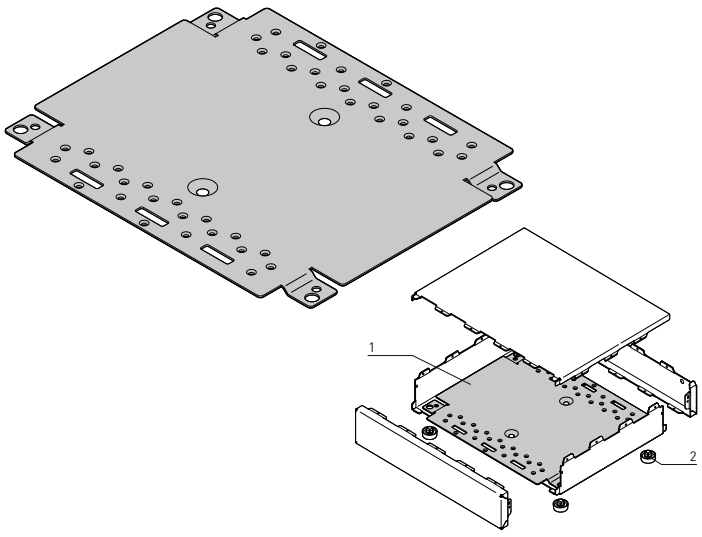


Illustration shows desktop case

- Mounting plate (raised 4 mm) for mounting individual components
- Mounting plate fixes into desktop case with 4 plastic feet or into 19" case with 4 screws

Delivery includes

Item	Qty	Description
1	1	Mounting plate, St, 1 mm, AlZn coated
2a	4	Desktop cases: Plastic foot, PC, UL 94 V-0, black
2b	4	19" case (width 444 mm): Countersunk screw
3	1	Assembly kit and user manual

Order Information

For case width	For case depth	Mounting plate Width	Depth	Part no.
mm	mm	mm	mm	
133	133	124.33	128.55	24822-033
133	177	124.33	173.00	24822-034
221	177	213.23	173.00	24822-054
221	221	213.23	217.45	24822-055
310	221	302.13	217.45	24822-075
399	221	391.03	217.45	24822-095
399	310	391.03	306.35	24822-097
444	221	435.48	217.45	24822-005
444	310	435.48	306.35	24822-007

PCB support for mounting plate

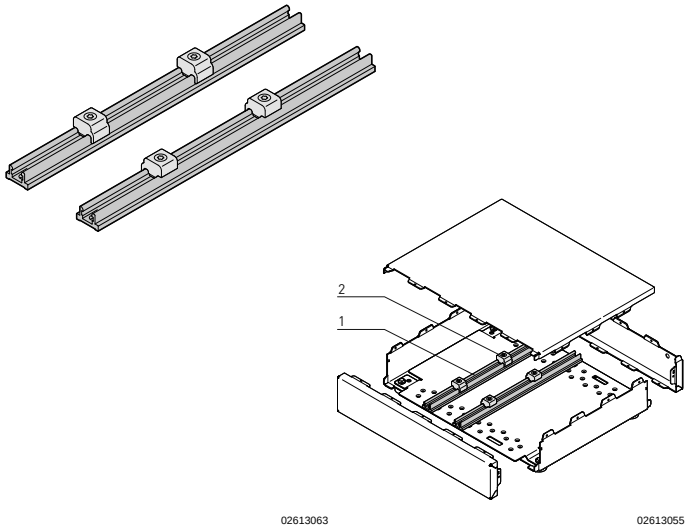


Illustration shows PCB holder mounted on the mounting plate

- Board support is bolted onto mounting plate
- PCB (board thickness 1.4 ... 2.6 mm) can be positioned flexibly

Delivery includes

Item	Qty	Description
1	2	PCB fastening, Al extrusion, clear aodized, width 13.5 mm, height 8.7 mm, for length see Order Information
2	4	PCB support, Al diecast, clear aodized, for board thickness from 1.4 ... 2.6 mm
3	1	Assembly kit and user manual

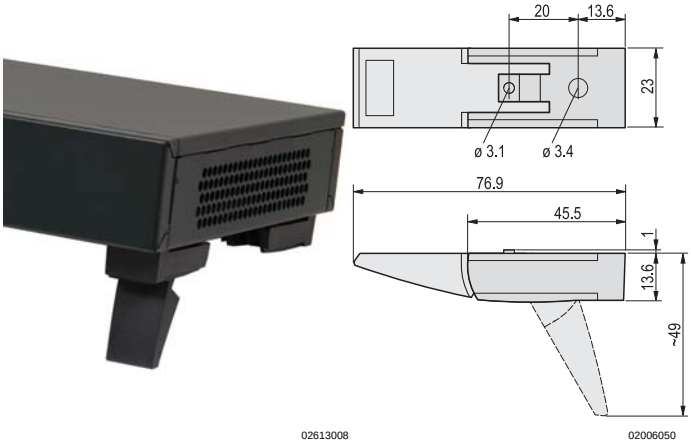
Order Information

For case depth	PCB support for mounting plate Length	Part no.
mm	mm	
133	128.55	24827-023
177	173.00	24827-024
221	217.45	24827-025
310	306.35	24827-027

Plastic tip-up foot



01810004



02613008 02006050

Application example

- Can be used instead of standard feet
- Carrying capacity: 25 kg per foot
- Mounting holes in bottom of casing

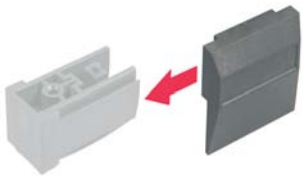
Delivery includes (kit)

Item	Qty	Description
1	4	Foot, PA, UL 94 V-0
2	4	Anti-slip protection, TPE
3	2	Tip-up device, PA, UL 94 V-0
4	1	Assembly kit

Order Information

Description	Part no.
Tip-up foot, anthracite, similar to RAL 7016	20603-002

Stacking aid





01810005 02613020

Application example
Interscale M

- Stacking aid is clipped onto tip-up foot (please order tip-up foot separately)

Delivery includes (kit)

Item	Qty	Description
1	4	Stacking aid, PA ,UL 94 V-0

Order Information

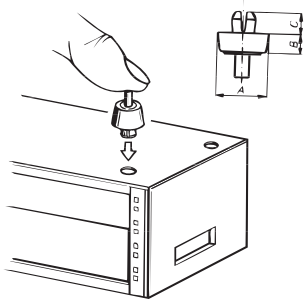
Description	Part no.
Stacking aid, anthracite, similar to RAL 7016	20603-003
Accessories	
Plastic tip-up foot anthracite, similar to RAL 7016, 4 pieces	20603-002

Note

- A plastic tip-up foot is required for mounting, please order separately

Plastic foot





02613010 A4-330

Illustration shows mounting of foot

Dimensions			Hole diameter
A	B	C	
mm	mm	mm	mm
16	7.2	4	7

Delivery includes

Item	Qty	Description
1	1	Plastic foot, PC, UL 94 V-0, black, with anti-slip protection

Order Information

Description	Qty	Part no.
For material thickness 1 ... 3 mm	SPQ 50 1)	60224-009
For material thickness 1 ... 3 mm	PU 4 2)	24820-004

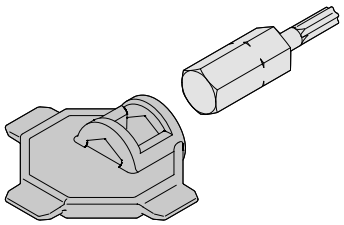
1) SPQ (standard pack quantity): Part number includes 1 piece, but delivery is exclusively made in standard pack quantity (SPQ); please order at least the SPQ quantity or a multiple

2) PU - Part no. includes one packing unit (PU); delivery is exclusively made in PU

Note

- Foot is inserted into mounting hole and then fixed by pressing in the expanding pin

Assembly tool



02613064

- Plastic tool with bit can be used for bolting together and opening the case

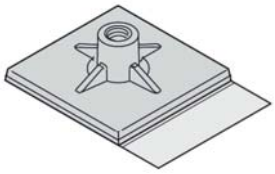
Delivery includes

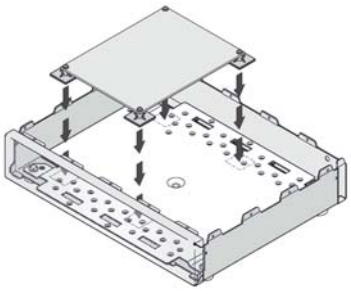
Item	Qty	Description
1	1	Assembly tool (plastic)
2	1	Bit, Torx, T10

Order Information

Description	Part no.
Assembly tool	24820-001

Adhesive base





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Example: board mounting with adhesive base

- For individually fixing e.g. PCBs or smaller components
- Base is affixed with adhesive foil; acts as a spacer. The component to be fixed is bolted to the base with the screw
- Fixes onto mounting plate or direct onto bottom of case

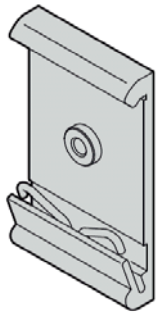
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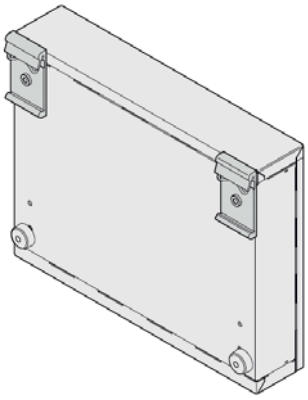
Item	Qty	Description
1	10	Adhesive base, plastic, 19 x 19 mm
2	10	Screw, Torx, T8
3	10	Washer, A2.7
4	1	User manual

Order Information

Description	Height mm	Part no.
Adhesive base	5	24827-005
Adhesive base	7	24827-007
Adhesive base	9	24827-009

Clip for horizontal rail mounting





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Example: Clip for horizontal rail mounted on case

- The clip can be used to fix the case to a horizontal rail
- The clip is bolted to the case instead of the foot and can then be fitted onto the rail

Delivery includes

Item	Qty	Description
1	2	Clip, Al profile, clear anodized, width 30 mm, 52 mm, snap mounting for 35 mm DIN rails EN 50022; M4 self-clinching nut
2	2	Screw, T20, M4 x 6
3	1	User manual

Order Information

Description	Part no.
Clip for horizontal rail mounting	24820-002

Technical data of DC axial fans



01108005

Illustration shows fan with dimensions 119 x 119 x 25 mm

Technical data DC axial fans

Fan dimensions	40 x 40 x 20 mm	80 x 80 x 25 mm	119 x 119 x 25 mm
Nominal voltage	12 VDC	12 VDC	12 VDC
Airflow volume	10 m^3/h	69 m^3/h	170 m^3/h
Noise level	18 dB(A)	32 dB(A)	43 dB(A)
Power consumption	0.9 W	2 W	5.3 W
Ambient temperature	- 20 ... +70 °C		
Terminal (AWG 28, TR 64, stripped and tin-plated)	Cable length 310 mm		
Approvals	VDE, CSA, UL		



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