

IP68 Waterproof Performance

Heavy Duty Diecast Aluminium Enclosure

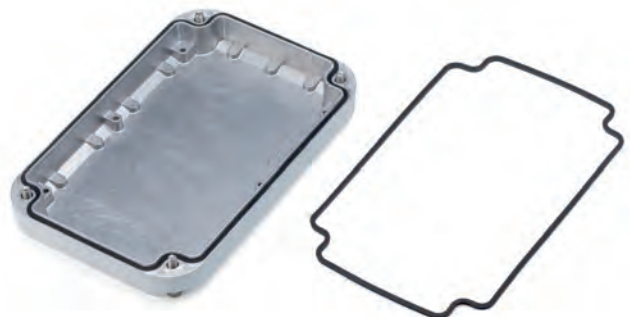
DW•DWH series



IP68 High performance at 24-hours/1m-depth immersion



*Do not use underwater/underground.



With a silicone waterproof gasket, it allows the enclosure to maintain a stable high waterproofing capability.

Selectable from 2 types : general-purpose DW series and the heat-sink DWH series.

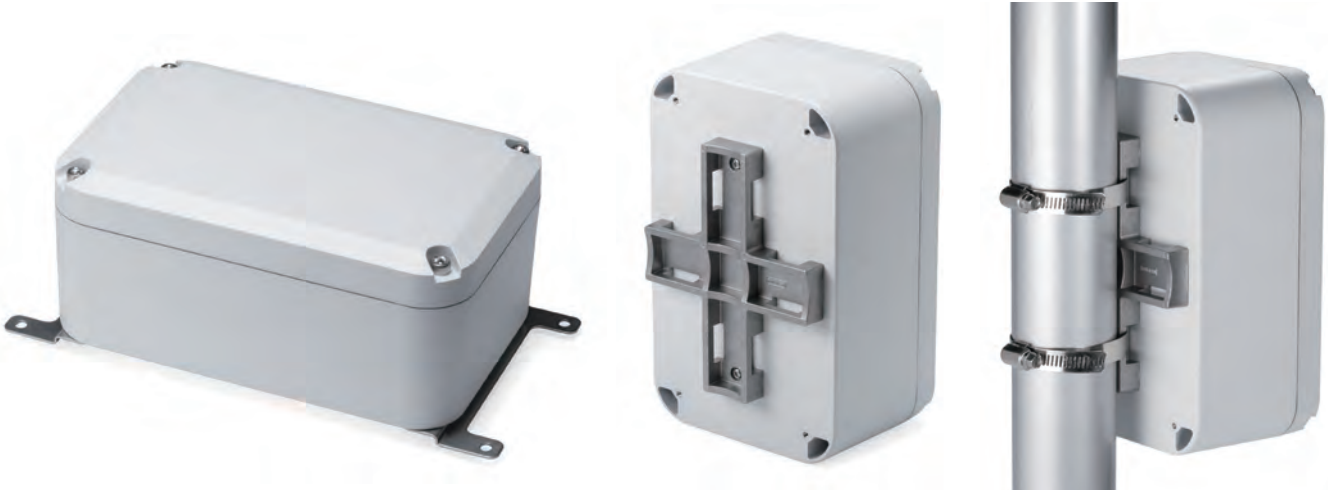


DW series: Easily matches various devices.



DWH series: Heat sink shape for high heat dissipation performance.

Easy installation on walls & poles



Application example - Suitable for a wide range of uses even under severe conditions.

Access Point



Plant Control Equipment



Shockproof Industrial PC



Junction Box

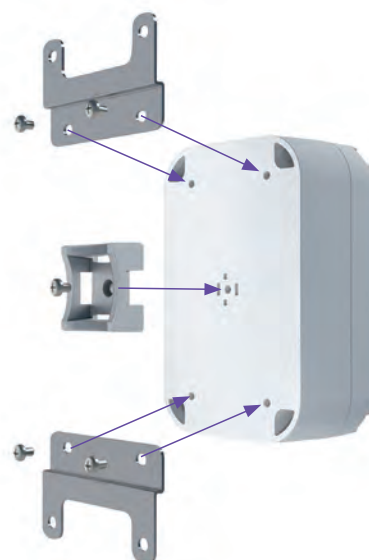
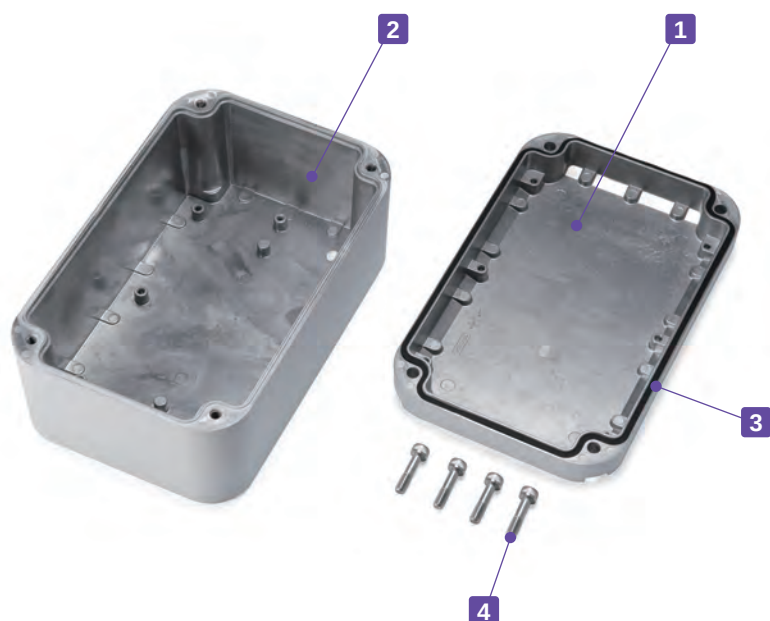




- IP68 high performance aluminium diecast box protected from immersion as long as 24 hours at 1m depth.
- EMC shielding is achieved by having the unfinished inner sides of the Top cover and Base, as well as the conductive silicone gasket.
- Suitable for use in a severe environment such as outdoor network device, plant control equipment, meteorological instruments and more.

Technical Data

Protection class : IP68 (24-hours/1m-depth)
 Operating temperature : -40°C ~ +105°C
 Recommended torque : 4.0 ~ 5.0N • m



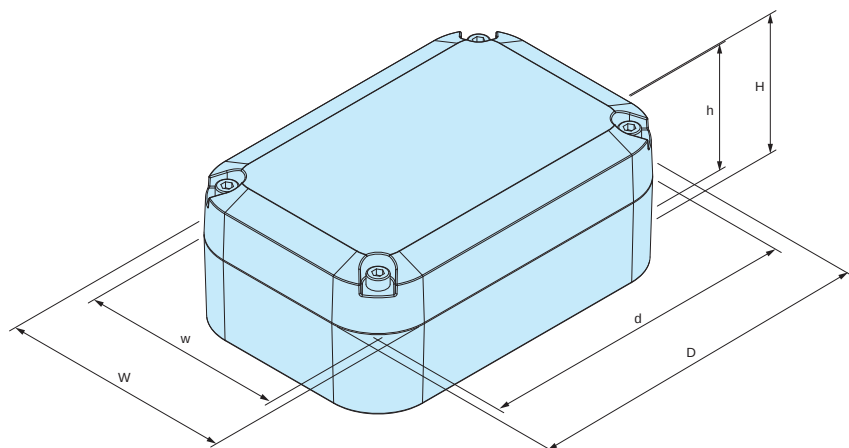
There are M4 threaded holes on the backside of the body for wall / pole mounting bracket.

Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	Diecast aluminium ADC12	White / Powder coated (Unfinished inside)
2	Base	1	Diecast aluminium ADC12	White / Powder coated (Unfinished inside)
3	Gasket	1	Conductive silicone	Black
4	Screw (Hexagon socket head)	4	Stainless steel	Unfinished

DW dimensions

■ DXF/DWG/PDF/STP drawings available on our website.



Product no. / Details

Product no.	W	D	H	w	d	h	Weight (g)
DW10-15- 6W	100	150	60	86	136	46	670
DW10-15- 9W	100	150	90	81	131	76	910
DW14-22- 7W	140	220	70	125	205	56	1,245
DW14-22-10W	140	220	100	123	203	86	1,640

Accessories (Optional parts)



Wall mounting bracket
DWF series
See page 153



Aluminium pole mounting bracket
DWMB-1N • WGMB-2N
See page 154



Pole mounting belt • ties
SNB • PKB series
See page 207 ~ 208



Mounting plate for DW • DWH
DWMP series
See page 153



DIN Rail
FDR series
See page 100



Mounting screw
SMS 4-8
See page 153



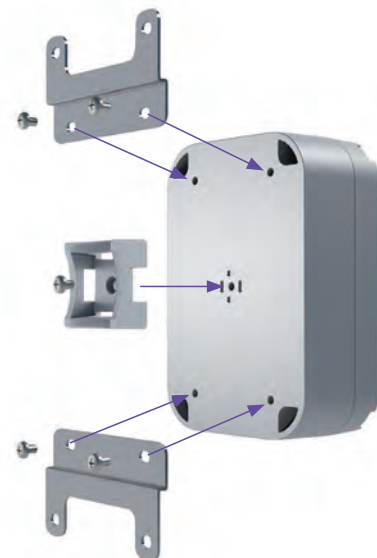
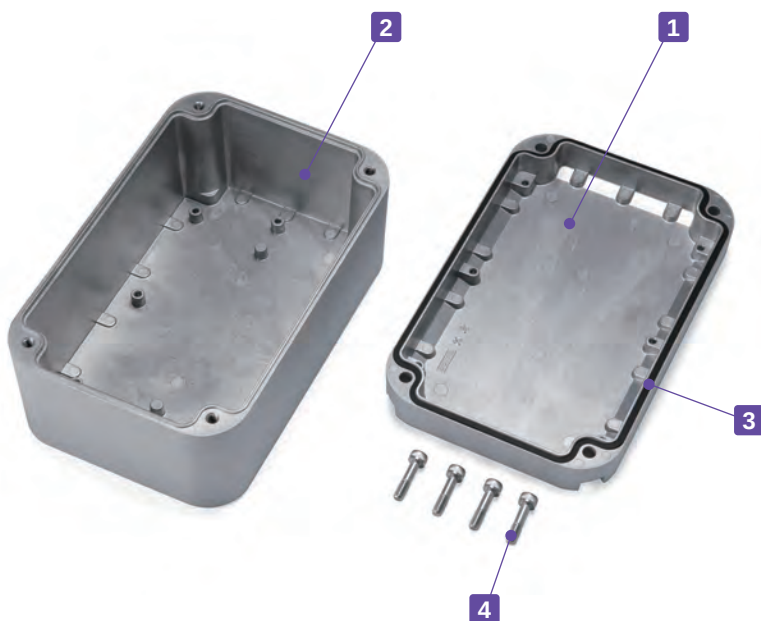
Cable glands
See page 181 ~ 193



- IP68 high performance aluminium diecast box protected from immersion as long as 24 hours at 1m depth.
- EMC shielding is achieved by having the unfinished inner sides of the Top cover and Base, as well as the conductive silicone gasket.
- Suitable for Access Points, Optical Transmission Equipment, Shockproof Industrial PCs and more.

Technical Data

Protection class : IP68 (24-hours/1m-depth)
 Operating temperature : -40°C ~ +105°C
 Recommended torque : 4.0 ~ 5.0N • m



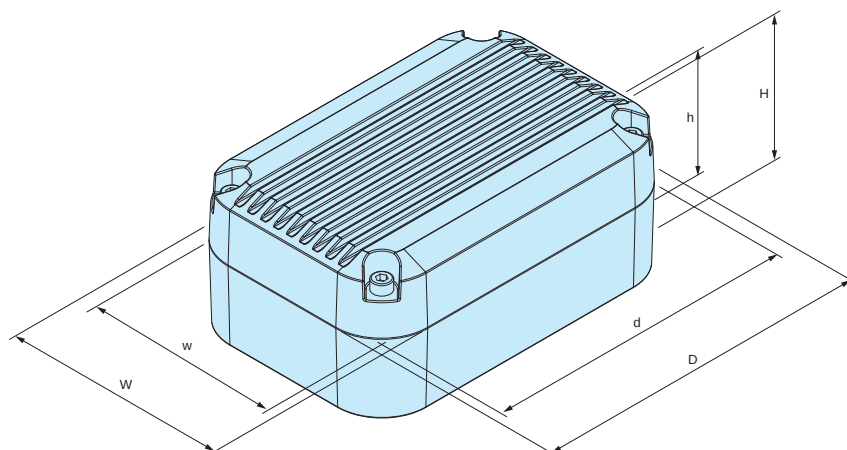
There are M4 threaded holes on the backside of the body for wall / pole mounting bracket.

Components

No.	Part name	Pcs	Material	Color / Finish
1	Heat-sink top cover	1	Diecast aluminium ADC12	Metallic silver / Powder coated (Unfinished inside)
2	Base	1	Diecast aluminium ADC12	Metallic silver / Powder coated (Unfinished inside)
3	Gasket	1	Conductive silicone	Black
4	Screw (Hexagon socket head)	4	Stainless steel	Unfinished

DWH dimensions

■ DXF/DWG/PDF/STP drawings available on our website.



Product no. / Details

Product no.	W	D	H	w	d	h	Weight (g)
DWH10-15 -6S	100	150	63.5	86	136	46	875
DWH10-15- 9S	100	150	93.5	81	131	76	1,115
DWH14-22- 7S	140	220	74	125	205	56	1,470
DWH14-22-10S	140	220	104	123	203	86	1,865

Accessories (Optional parts)



Wall mounting bracket
DWF series
See page 153



Aluminium pole mounting bracket
DWMB-1N • WGMB-2N
See page 154



Pole mounting belt • ties
SNB • PKB series
See page 207 ~ 208



Mounting plate for DW • DWH
DWMP series
See page 153



DIN Rail
FDR series
See page 100



Mounting screw
SMS 4-8
See page 153



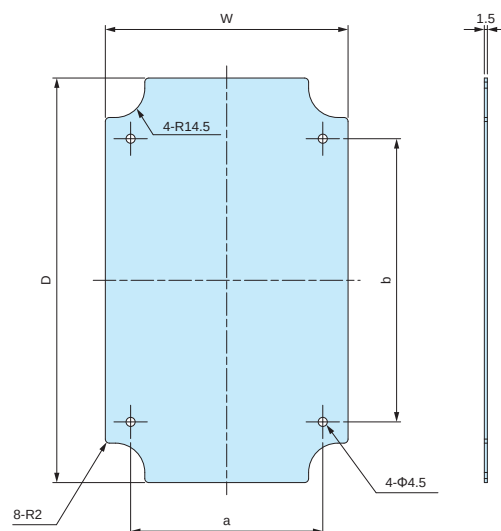
Cable glands
See page 181 ~ 193

DWMP series

MOUNTING PLATE for DW • DWH



■ DXF/DWG/PDF/STP drawings available on our website.



■ Material / Finish : Aluminium A1050P t1.5 / Unfinished

■ Covered with a protective film on one side.

■ Hole milling, clinching spacer customizations are available.
See our website for more details.

Product no. / Details

Including 4x screws (Pan head self tapping M4-8 Steel Trivalent chromate)

Product no.	W	D	a	b	Suitable model	Weight (g)
DWMP10-15	78	128	65	80	DW • DWH10-15-□	39
DWMP14-22	120	200	95	140	DW • DWH14-22-□	96

DWF series

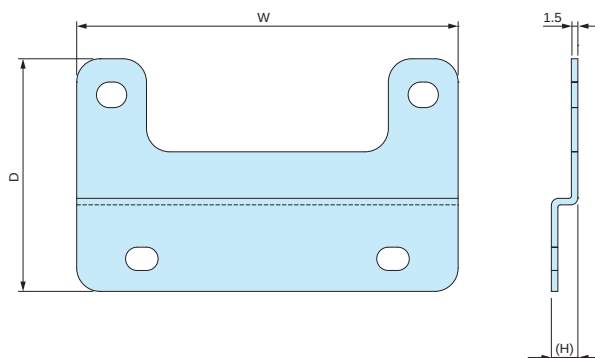
WALL MOUNTING BRACKET for DW • DWH



■ DXF/DWG/PDF/STP drawings available on our website.



■ Material / Finish : Stainless Steel / Barrel finish



Product no. / Details

Including 4x screws (Pan head M4-6 Stainless Steel Unfinished)

Product no.	W	D	(H)	Suitable model	Weight (g)	Pack of
DWF-10	82	50	(5.8)	DW • DWH10-15-□	77 (2pcs)	2
DWF-15	132	50	(5.8)	DW • DWH14-22-□	107 (2pcs)	2

SMS4-8

MOUNTING SCREW

■ Self-tapping screws for mounting PCB and DIN Rail (FDR series - see page 100) on bosses or standoffs.

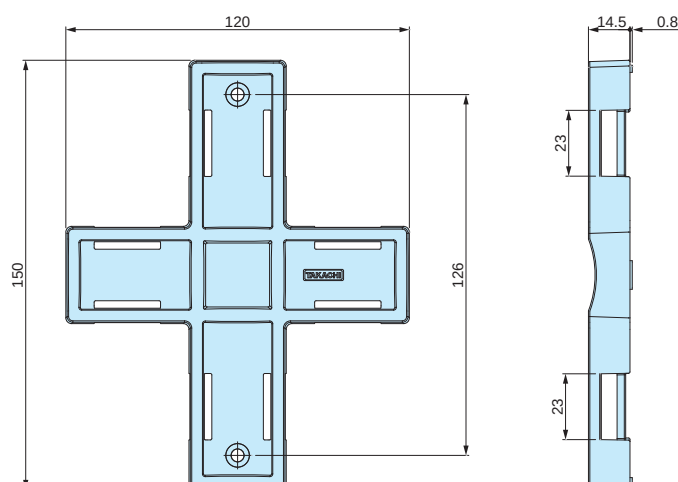


Product no. / Details

Product no.	Details	Material	Finish	Weight(g)	Pack of
SMS4-8	M4-8 Pan head tapping	Steel	Trivalent chromate	1 (1pc)	4

WGMB-2N

DIECAST ALUMINIUM POLE MOUNTING BRACKET for DW • DWH



- Pole mount bracket made from robust diecast aluminium.
- DXF/DWG/PDF/STP drawings available on our website.
- Hole milling is not required when installing the mount bracket, thus allowing the enclosure to maintain its protection class.
- Can be used for DW • DWH14-22-□ models.
- Pole mounting belt can be installed in either W or D direction.
- Pole mount is possible with the use of SNB or PKB series mounting belt. See page 207 ~ 208 for more details.

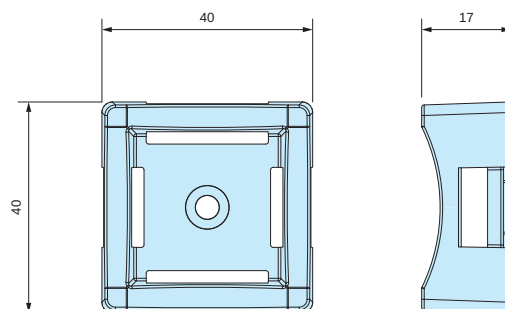
Product no. / Details

■ Stainless steel mounting screws included.

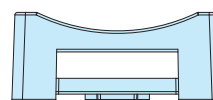
Product no.	Suitable models	Material / Finish	Weight (g)	Pack of
WGMB-2N	DW • DWH14-22-□	Diecast aluminium ADC12 / Shot blast	126	1

DWMB-1N

WALL MOUNTING BRACKET for DW • DWH



- Material / Finish : Diecast aluminium ADC12 / Shot blast
- Pole mount bracket made from robust diecast aluminium.
- Hole milling is not required when installing the mount bracket, thus allowing the enclosure to maintain its protection class.
- Can be used for DW • DWH10-15-□ models.
- Pole mounting belt can be installed in either W or D direction.
- Pole mount is possible with the use of SNB or PKB series mounting belt. See page 207 ~ 208 for more details.



■ DXF/DWG/PDF/STP drawings available on our website.

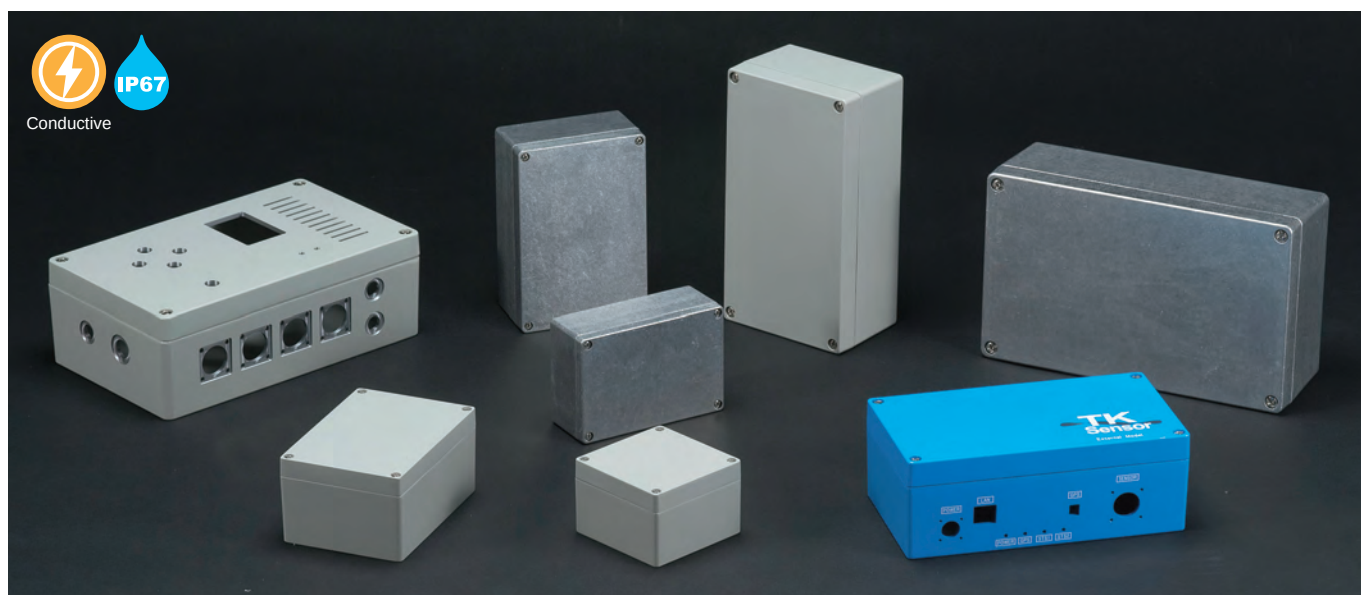
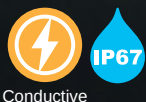
Product no. / Details

Including 1x screw (Pan head M4-6 Stainless Steel Unfinished)

Product no.	Suitable models	Weight (g)	Pack of
DWMB-1N	DW • DWH10-15-□	24	1

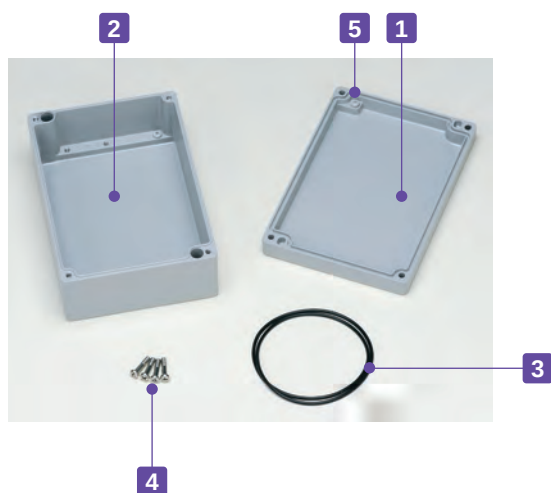
BDN series

IP67 DIECAST ALUMINIUM BOX



Technical Data

Protection class : IP67
 Operating temperature : -40°C ~ +105°C
 Recommended torque : 1.0N • m (10kgf • cm)



- 8 different sizes available for both light gray powder coated and unfinished models.
- O-ring gasket is good for maintaining both waterproof and dustproof functionality.
- Shock resistant diecast aluminium box.
- Conductivity can be achieved by utilization of the contact between the unfinished inner surfaces (only applicable to "N" type).

Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	Diecast aluminium ADC12	Light gray / Powder coated • Natural / Unfinished
2	Base	1	Diecast aluminium ADC12	Light gray / Powder coated • Natural / Unfinished
3	O-ring gasket	1	Silicone	Black
4	Screw	4	Stainless steel	Unfinished
5	Earthing screw	2	Steel M4-5 pan head	Nickel plated

Accessories (Optional parts)



Wall mounting bracket CK series
See website

Mounting plate FTB series
See website

Pole mounting bracket SSK series
See website

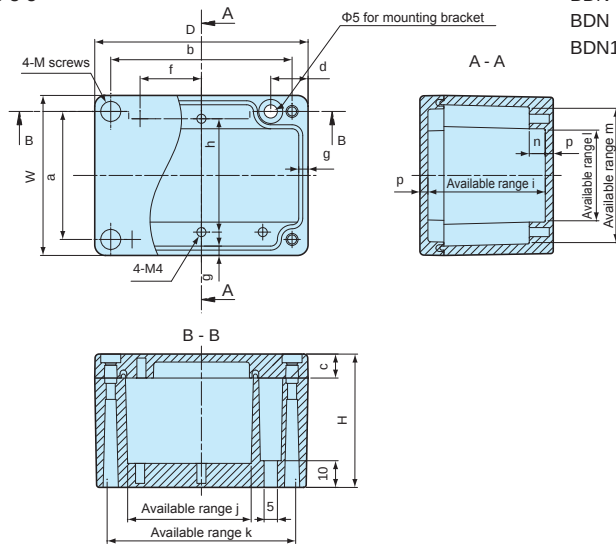
DIN Rail FDR series
See page 100

Cable gland
See page 181 ~ 193

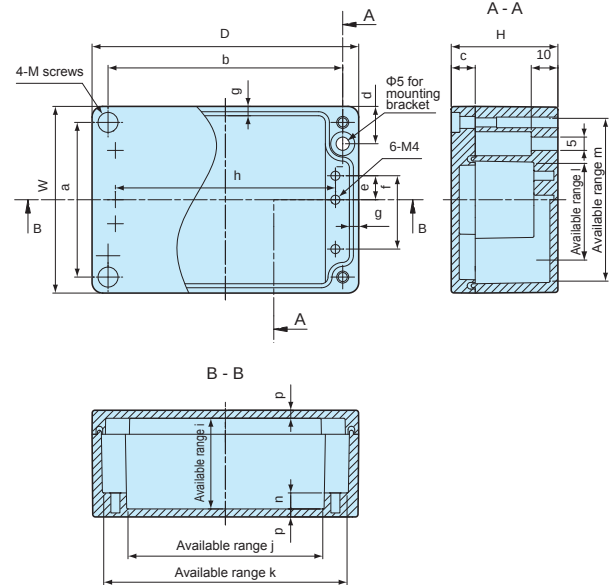
BDN dimensions

■ DXF/DWG/PDF drawings available on our website.

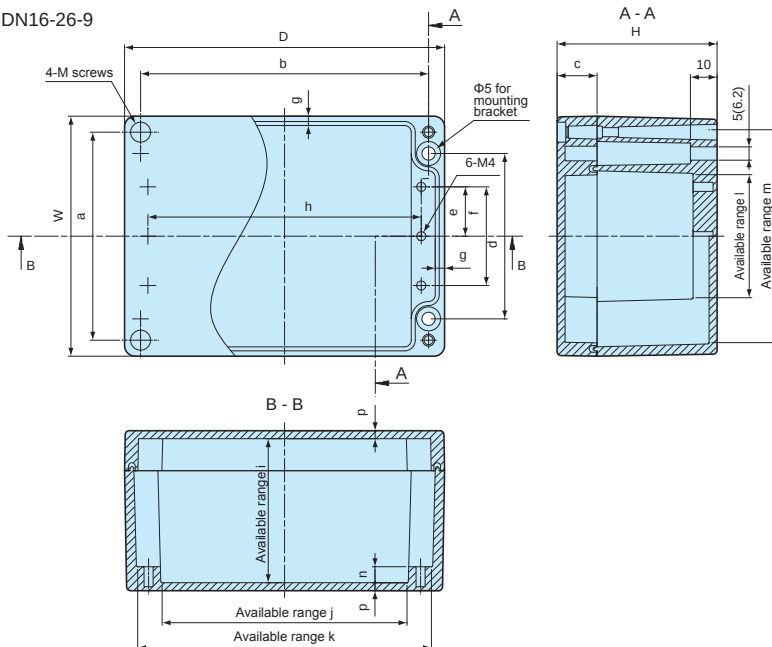
BDN 6-8-5



BDN 7-10-4
BDN 9-13-5
BDN11-16-6



BDN 9- 9-6
BDN10-14-7
BDN12-22-8
BDN16-26-9



※Dimension in () = BDN12-22-8
BDN16-26-9

Product no. / Details

Product no.		Dimensions						Weight (g)
● Light gray	● Natural Conductive	W	D	H	a	b	c	
BDN 6- 8-5G	BDN 6- 8-5N	60	80	50	48	68	9	240
BDN 7-10-4G	BDN 7-10-4N	70	100	40	58	88	9	250
BDN 9- 9-6G	BDN 9- 9-6N	90	90	60	78	78	15	395
BDN 9-13-5G	BDN 9-13-5N	90	130	50	78	118	9	420
BDN10-14-7G	BDN10-14-7N	100	140	70	88	128	15	635
BDN11-16-6G	BDN11-16-6N	110	160	60	98	148	15	640
BDN12-22-8G	BDN12-22-8N	120	220.5	80	105	205	20	1,155
BDN16-26-9G	BDN16-26-9N	160	260	90	140	240	20	2,145

Product no.		Dimensions												
● Light gray	● Natural Conductive	d	e	f	g	h	i	j	k	ℓ	m	n	p	M
BDN 6- 8-5G	BDN 6- 8-5N	14	–	23	3.5	42.5	44	45	71	33	51	6	3	M4
BDN 7-10-4G	BDN 7-10-4N	14	11	31	3	85	34	75	92.5	38	62.5	6	3	M4
BDN 9- 9-6G	BDN 9- 9-6N	62	18.5	37	3.5	72	54	62.5	80.7	46.7	80.5	6	3	M4
BDN 9-13-5G	BDN 9-13-5N	14	19	47.5	3.5	112.5	44	102.7	120.9	55.9	80.7	6	3	M4
BDN10-14-7G	BDN10-14-7N	72	24	48	3.5	121	64	111	130	56	90	6	3	M4
BDN11-16-6G	BDN11-16-6N	14	29	67.5	3.5	142.5	54	132.5	150.7	75.7	100.5	6	3	M4
BDN12-22-8G	BDN12-22-8N	84.6	28	56	3.9	196	74	183	206	62	105	6	3	M5
BDN16-26-9G	BDN16-26-9N	110	36	72	4.8	230	82	216	247	87	146	9	4	M6

AW • AWN • AWP series

IP68 ALUMINIUM ENCLOSURE

AW • AWN • AWP series are highly functional aluminium enclosures which are IP68 (24 hours / 1m depth immersion) rated with heat dissipating heat-sink fins.

34 sizes available. Standard, Flanged, Shielding, and Silicone protector types are available.

Suitable for LED power supply, industrial camera, controller or measuring instrument where waterproof and cooling performance are crucial.

APPLICATION EXAMPLE

Waterproof Boating Network Modular System



GNSS Receiver



Heavy Duty Portable Hardness Tester



LoRa Wan Gateway



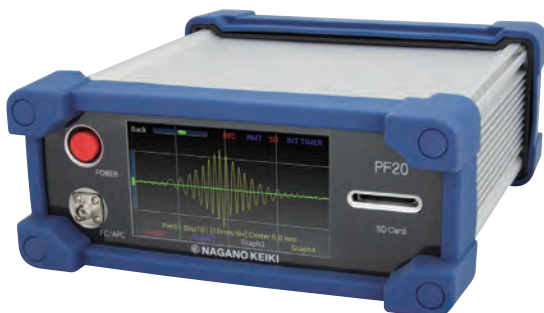
Radio-Control Electronic Exploder



Pin Hole Detector



FBG Data Logger



Data Logger with 3G Modem Report Function



Custom Length Available

Flexible frame length from 50mm to 700mm in 0.1mm intervals.

No minimum order quantity and short lead time for small quantity order.

See our website for further details.





- IP68 and heat dissipation enclosure. Designed with flanged end panels.
- PCB or chassis is mounted by sliding it horizontally into an inner-grooved body frame.
- Designed for a tough environment where waterproof and heat countermeasures are required.
- Suitable for outdoor use such as LED power supplies and junction boxes.

Technical Data

Protection class : IP68 (24 hours/1m depth)
 Operating temperature : -40°C ~ +105°C
 Recommended torque : 1.0N • m

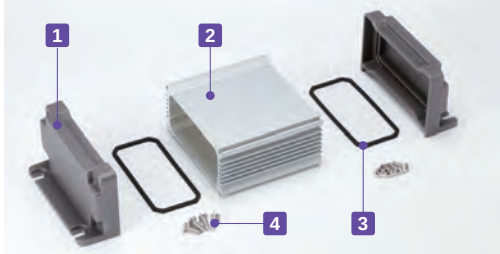
Normal N type Components

No.	Part name	Pcs	Material	Color / Finish
1	Flanged end panel	2	Diecast aluminium ADC12	Metallic gray • Black / Powder coated
2	Body frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized with clear coating
3	Gasket	2	Silicone	Black
4	Screw	8	Stainless steel	Unfinished

EMC Shielded E type Components

No.	Part name	Pcs	Material	Color / Finish
1	Flanged end panel	2	Diecast aluminium ADC12	Silver • Black / Painted (Unfinished inside)
2	Body frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized with clear coating
3	Gasket	2	Conductive silicone	Black
4	Screw	8	Stainless steel	Unfinished

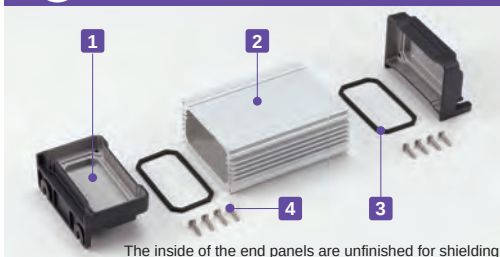
Normal - N type



Color type



EMC Shielded - E type

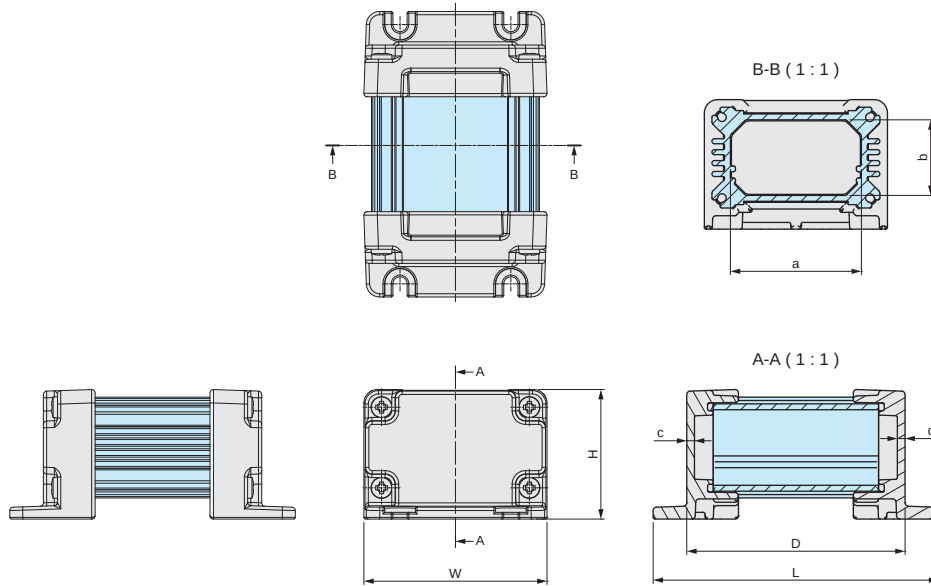


Color type



AW dimensions

■ DXF/DWG/PDF/STP drawings available on our website.



Product no. / Details

■ Please suffix color code at the end of the product number.

Product no.	W	H	D	L	a	b	c	Weight (g)
AW 5-4- 7□□□	54.6	38.6	65	85	39	22.5	2.3	128.5
AW 5-4- 9□□□	54.6	38.6	85	105	39	22.5	2.3	149
AW 5-4-11□□□	54.6	38.6	110	130	39	22.5	2.3	175
AW 5-4-14□□□	54.6	38.6	135	155	39	22.5	2.3	201.5
AW 7-7- 8□□□	65.8	70.8	80	106	47	51	2.5	294.5
AW 7-7-11□□□	65.8	70.8	110	136	47	51	2.5	350
AW 7-7-15□□□	65.8	70.8	150	176	47	51	2.5	424.5
AW 7-7-20□□□	65.8	70.8	200	226	47	51	2.5	517
AW 7-7-25□□□	65.8	70.8	250	276	47	51	2.5	610
AW 8-5- 9□□□	80.8	50.8	90	116	62	31	2.5	289.5
AW 8-5-12□□□	80.8	50.8	115	141	62	31	2.5	330.5
AW 8-5-14□□□	80.8	50.8	140	166	62	31	2.5	372
AW 8-5-18□□□	80.8	50.8	175	201	62	31	2.5	429.5
AW 9-9-10□□□	86.3	92	100	129	66.5	66.5	3	560.5
AW 9-9-13□□□	86.3	92	125	154	66.5	66.5	3	633.5
AW 9-9-17□□□	86.3	92	170	199	66.5	66.5	3	764.5
AW 9-9-22□□□	86.3	92	220	249	66.5	66.5	3	910.5
AW 9-9-28□□□	86.3	92	275	304	66.5	66.5	3	1,071
AW11-6-11□□□	106.3	62	110	139	86.5	36.5	3	526.5
AW11-6-15□□□	106.3	62	150	179	86.5	36.5	3	625
AW11-6-19□□□	106.3	62	190	219	86.5	36.5	3	723.5
AW11-6-24□□□	106.3	62	240	269	86.5	36.5	3	847
AW12-8-11□□□	120	77	105	134	100.2	51.5	3	614.5
AW12-8-14□□□	120	77	140	169	100.2	51.5	3	720.5
AW12-8-17□□□	120	77	179.5	208.5	100.2	51.5	3	840
AW12-8-22□□□	120	77	215	244	100.2	51.5	3	947.5
AW16-9-14□□□	156.3	87	135	164	136.5	61.5	3	945.5
AW16-9-18□□□	156.3	87	175	204	136.5	61.5	3	1,092.5
AW16-9-23□□□	156.3	87	225	254	136.5	61.5	3	1,275.5
AW16-9-28□□□	156.3	87	275	304	136.5	61.5	3	1,459
AW21-9-17□□□	206.3	87	170	199	186.5	61.5	3	1,303
AW21-9-21□□□	206.3	87	210	239	186.5	61.5	3	1,473.5
AW21-9-26□□□	206.3	87	260	289	186.5	61.5	3	1,686.5
AW21-9-31□□□	206.3	87	310	339	186.5	61.5	3	1,899.5

■ Custom length is available.

Accessories (Optional parts)



Mounting plate AWC series
See page 166



Hexagon socket head screw HCS series
See page 166



Cable gland
See page 181 ~ 193



Pole mounting bracket SSK series
See website



Protective vent CVP • PMF series
See page 195 ~ 200

EMC
Shielding

IP68



- IP68 and heat dissipation enclosure design. Selectable in both Normal and EMC Shielded type.
- The extruded aluminium frame and diecast aluminium panels make it extremely suitable to be used in harsh environments where waterproofing and heat dissipation is essential.
- PCB or chassis can be mounted by sliding it horizontally into inner-grooved body frame.
- Suitable for measuring instruments, industrial control boxes, industrial camera housings, and other applications.

Technical Data

Protection class : IP68 (24 hours/1m depth)
 Operating temperature : -40°C ~ +105°C
 Recommended torque : 1.0N • m

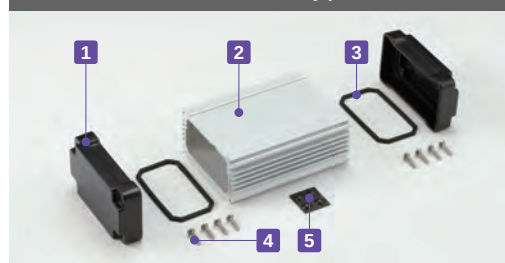
Normal N type Components

No.	Part name	Pcs	Material	Color / Finish
1	End panel	2	Diecast aluminium ADC12	Metallic gray • Black / Powder coated
2	Body frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized with clear coating
3	Gasket	2	Silicone	Black
4	Screw	8	Stainless steel	Unfinished
5	Rubber feet	4	Polyurethane	Black

EMC Shielded E type Components

No.	Part name	Pcs	Material	Color / Finish
1	End panel	2	Diecast aluminium ADC12	Silver • Black / Painted (Unfinished inside)
2	Body frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized with clear coating
3	Gasket	2	Conductive silicone	Black
4	Screw	8	Stainless steel	Unfinished
5	Rubber feet	4	Polyurethane	Black

Normal - N type



Color type



Metallic gray / Silver

N G S



Black / Silver

N B S

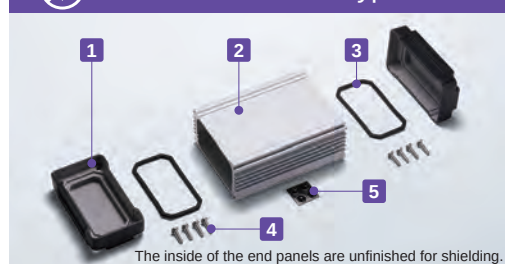


Black / Black

N B B



EMC Shielded - E type



Color type



Silver / Silver

E S S



Black / Silver

E B S

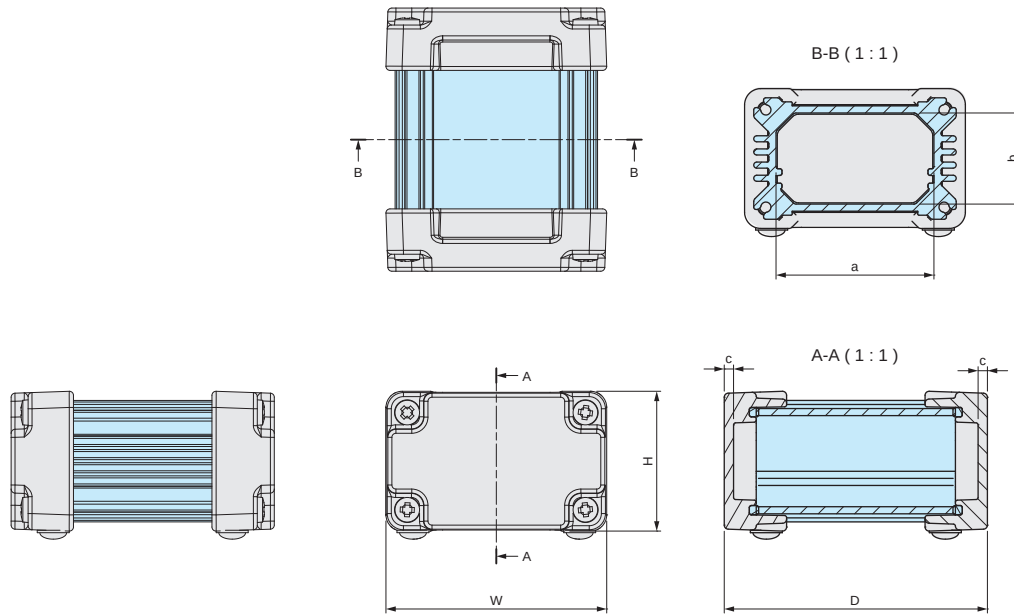


Black / Black

E B B

AWN dimensions

■ DXF/DWG/PDF/STP drawings available on our website.



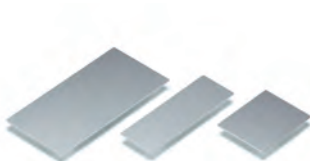
Product no. / Details

■ Please suffix color code at the end of the product number.

Product no.	W	H	D	a	b	c	Weight (g)
AWN 5-4- 7□□□	54.6	34.6	65	39	22.5	2.3	118.5
AWN 5-4- 9□□□	54.6	34.6	85	39	22.5	2.3	139
AWN 5-4-11□□□	54.6	34.6	110	39	22.5	2.3	165
AWN 5-4-14□□□	54.6	34.6	135	39	22.5	2.3	191.5
AWN 7-7- 8□□□	65.8	65.8	80	47	51	2.5	272.5
AWN 7-7-11□□□	65.8	65.8	110	47	51	2.5	328
AWN 7-7-15□□□	65.8	65.8	150	47	51	2.5	402.5
AWN 7-7-20□□□	65.8	65.8	200	47	51	2.5	495
AWN 7-7-25□□□	65.8	65.8	250	47	51	2.5	588
AWN 8-5- 9□□□	80.8	45.8	90	62	31	2.5	259.5
AWN 8-5-12□□□	80.8	45.8	115	62	31	2.5	300.5
AWN 8-5-14□□□	80.8	45.8	140	62	31	2.5	342
AWN 8-5-18□□□	80.8	45.8	175	62	31	2.5	399.5
AWN 9-9-10□□□	86.3	86.3	100	66.5	66.5	3	521.5
AWN 9-9-13□□□	86.3	86.3	125	66.5	66.5	3	594.5
AWN 9-9-17□□□	86.3	86.3	170	66.5	66.5	3	725.5
AWN 9-9-22□□□	86.3	86.3	220	66.5	66.5	3	871.5
AWN 9-9-28□□□	86.3	86.3	275	66.5	66.5	3	1,032
AWN11-6-11□□□	106.3	56.3	110	86.5	36.5	3	479.5
AWN11-6-15□□□	106.3	56.3	150	86.5	36.5	3	578
AWN11-6-19□□□	106.3	56.3	190	86.5	36.5	3	676.5
AWN11-6-24□□□	106.3	56.3	240	86.5	36.5	3	800
AWN12-8-11□□□	120	71.3	105	100.2	51.5	3	590.5
AWN12-8-14□□□	120	71.3	140	100.2	51.5	3	696.5
AWN12-8-17□□□	120	71.3	179.5	100.2	51.5	3	816
AWN12-8-22□□□	120	71.3	215	100.2	51.5	3	923.5
AWN16-9-14□□□	156.3	81.3	135	136.5	61.5	3	871.5
AWN16-9-18□□□	156.3	81.3	175	136.5	61.5	3	1,018.5
AWN16-9-23□□□	156.3	81.3	225	136.5	61.5	3	1,201.5
AWN16-9-28□□□	156.3	81.3	275	136.5	61.5	3	1,385
AWN21-9-17□□□	206.3	81.3	170	186.5	61.5	3	1,261
AWN21-9-21□□□	206.3	81.3	210	186.5	61.5	3	1,431.5
AWN21-9-26□□□	206.3	81.3	260	186.5	61.5	3	1,644.5
AWN21-9-31□□□	206.3	81.3	310	186.5	61.5	3	1,857.5

■ Custom length is available.

Accessories (Optional parts)



Mounting plate AWC series
See page 166



Hexagon socket head screw HCS series
See page 166



Cable gland
See page 181 ~ 193

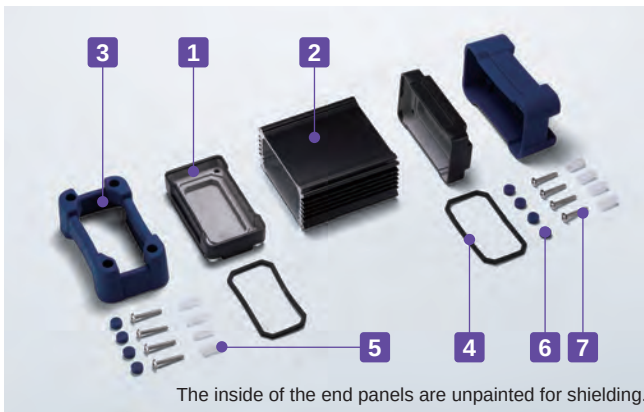


Silicone protector AWSP series
See page 165



Technical Data

Protection class : IP68 (24 hours/1m depth)
Operating temperature : -40°C ~ +105°C
Recommended torque : 1.0N • m



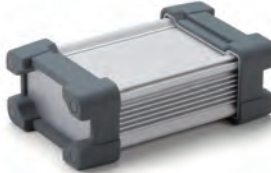
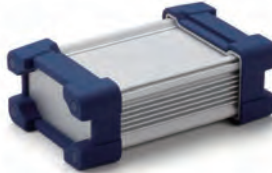
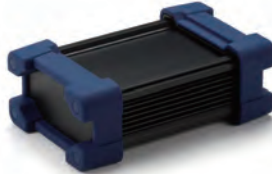
- Strong impact resistant enclosure with tough silicone boot protectors.
- Specifically designed with heat dissipation effect, EMC shielding and IP68 rating.
- PCB or chassis can be horizontally mounted by sliding into an inner-grooved body frame.
- Available in 25 sizes and 6 different color combinations. Selectable from a total of 150 different combinations.
- Suitable for measuring instruments, industrial control boxes, industrial camera housings, and other applications.

Components

No.	Part name	Pcs	Material	Color / Finish
1	End panel	2	Diecast aluminium ADC12	Silver • Black / Painted (Unfinished inside)
2	Body frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized with clear coating
3	Protector	2	Silicone	Black • Gray • Navy
4	Conductive gasket	2	Conductive silicone	Black
5	Spacer	8	Resin	White
6	Blind cap	8	Silicone	Black • Gray • Navy
7	Screw	8	Stainless steel	Unfinished

■ AWP series utilizes AWN series E type enclosures.
If N type is required, kindly purchase the enclosure and silicone protector separately.

Color Type

Code	S B Silver / Black	S G Silver / Gray	S N Silver / Navy
Color			
Code	B B Black / Black	B G Black / Gray	B N Black / Navy
Color			

Product no. / Details

■ Please suffix color code at the end of the product number.

Product no.	W	H	D	※Thermal resistance rate (°C/W)	Weight (g)
AWP 8-5- 9□□	87.4(80.8)	53.6(45.8)	114 (90)	5.97	353.5
AWP 8-5-12□□	87.4(80.8)	53.6(45.8)	139(115)	5.01	394.5
AWP 8-5-14□□	87.4(80.8)	53.6(45.8)	164(140)	4.37	436
AWP 8-5-18□□	87.4(80.8)	53.6(45.8)	199(175)	3.76	493.5
AWP 9-9-10□□	93.9(86.3)	95.1(86.3)	130(100)	3.1	693
AWP 9-9-13□□	93.9(86.3)	95.1(86.3)	155(125)	2.63	766
AWP 9-9-17□□	93.9(86.3)	95.1(86.3)	200(170)	2.12	897
AWP 9-9-22□□	93.9(86.3)	95.1(86.3)	250(220)	1.79	1,043
AWP 9-9-28□□	93.9(86.3)	95.1(86.3)	305(275)	1.54	1,203.5
AWP11-6-11□□	113.9(106.3)	65.1(56.3)	140(110)	4.52	652.5
AWP11-6-15□□	113.9(106.3)	65.1(56.3)	180(150)	3.62	751.5
AWP11-6-19□□	113.9(106.3)	65.1(56.3)	220(190)	3.08	850
AWP11-6-24□□	113.9(106.3)	65.1(56.3)	270(240)	2.64	973
AWP12-8-11□□	127.6(120)	80.1(71.3)	135(105)	3.6	778.5
AWP12-8-14□□	127.6(120)	80.1(71.3)	170(140)	2.93	885
AWP12-8-17□□	127.6(120)	80.1(71.3)	209.5(179.5)	2.47	1,004.5
AWP12-8-22□□	127.6(120)	80.1(71.3)	245(215)	2.18	1,112
AWP16-9-14□□	163.9(156.3)	90.1(81.3)	165(135)	2.64	1,094
AWP16-9-18□□	163.9(156.3)	90.1(81.3)	205(175)	2.2	1,240.5
AWP16-9-23□□	163.9(156.3)	90.1(81.3)	255(225)	1.86	1,424
AWP16-9-28□□	163.9(156.3)	90.1(81.3)	305(275)	1.63	1,607.5
AWP21-9-17□□	213.9(206.3)	90.1(81.3)	202(170)	2.3	1,571.5
AWP21-9-21□□	213.9(206.3)	90.1(81.3)	242(210)	1.99	1,742
AWP21-9-26□□	213.9(206.3)	90.1(81.3)	292(260)	1.72	1,955.5
AWP21-9-31□□	213.9(206.3)	90.1(81.3)	342(310)	1.54	2,168.5

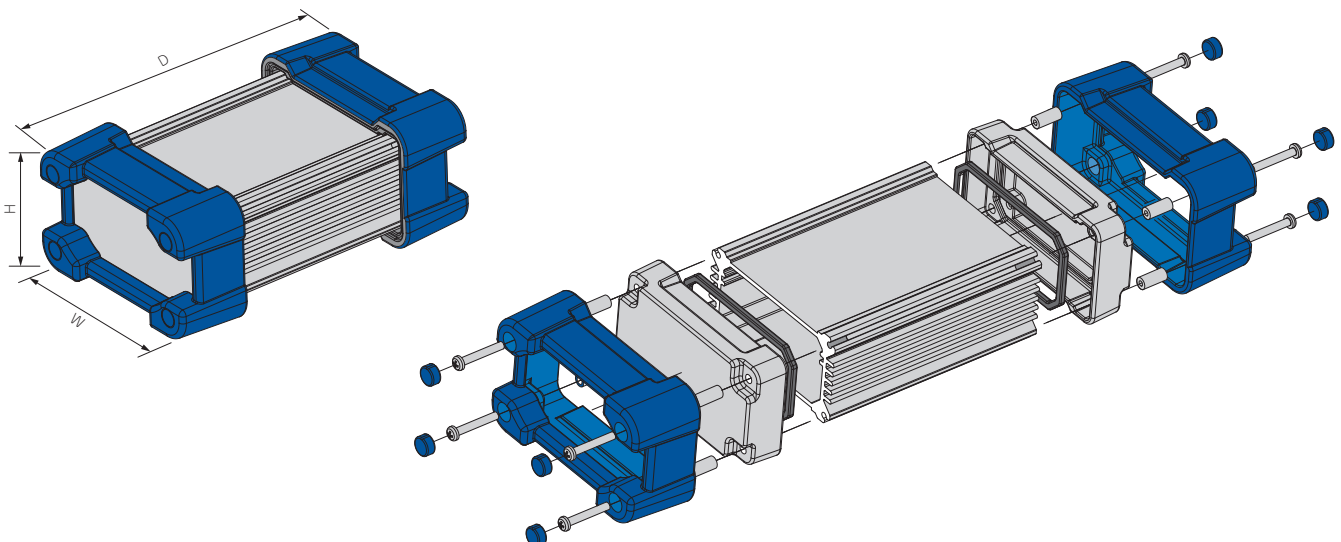
■ () value = enclosure dimension.

※ Thermal resistance test condition

- Ambient air cooling
- Heat-sink fins are set perpendicular to the ground with temperature at 60°C.
- Anodized aluminium extrusion
- Heat source is applied on the opposite side (inner side) of the fins.

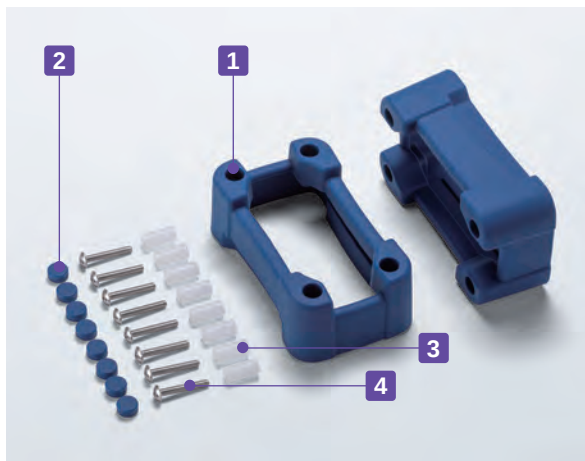
AWP dimensions

■ DXF/DWG/PDF/STP drawings available on our website.



AWSP series

SILICONE PROTECTOR for AWN

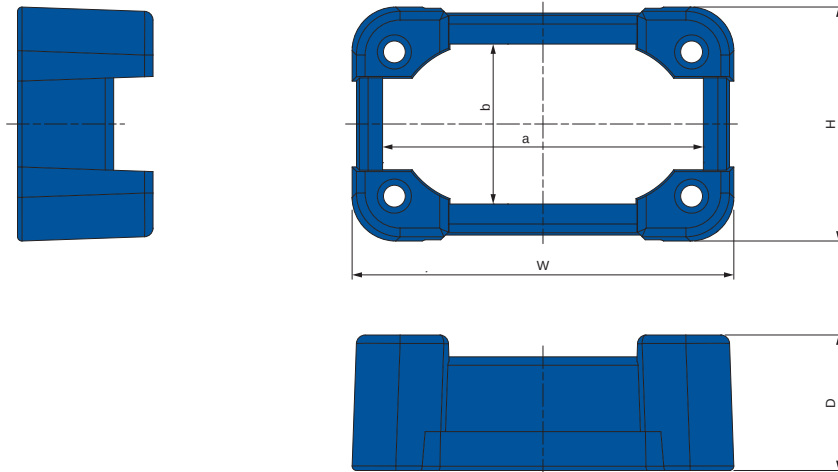


Color Type

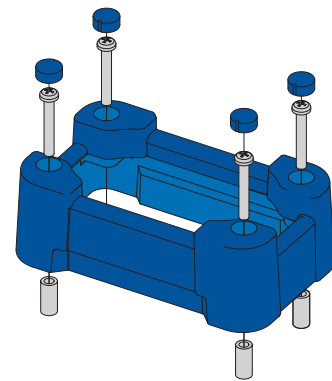
Code	B Black	G Gray	N Navy
Color			

■ Silicone protector for AWN series.

AWSP dimensions



■ DXF/DWG/PDF drawings available on our website.



Components

No.	Part name	Pcs	Material	Color / Finish
1	Protector	2	Silicone	Black • Gray • Navy
2	Blind cap	8	Silicone	Black • Gray • Navy
3	Spacer	8	POM	White
4	Screw	8	Stainless steel	Unfinished

Product no. / Details

■ Please suffix color code at the end of the product number.

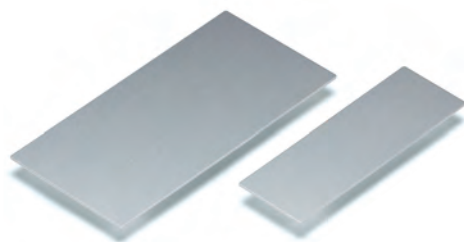
Product no.	W	H	D	a	b	Screw size	Suitable models	Weight (g)
AWSP 8-5□	87.4	53.6	31	73.4	36.6	M3	AWN 8-5-□	100.5
AWSP 9-9□	93.9	95.1	35.5	76.9	75.1	M4	AWN 9-9-□	184.5
AWSP11-6□	113.9	65.1	35.5	96.9	45.1	M4	AWN11-6-□	186
AWSP12-8□	127.6	80.1	35.5	110.6	60.1	M4	AWN12-8-□	201
AWSP16-9□	163.9	90.1	35.5	145.9	69.1	M4	AWN16-9-□	235
AWSP21-9□	213.9	90.1	39.5	192.9	66.1	M5	AWN21-9-□	333

■ Protect switches and/or connectors on end panels from impact when dropped, etc. Custom color is available from just 1 set. For 250 sets or more, manufacturing costs will be similar to a standard color. Please inquire for more details. For custom color order, please specify **PANTONE®** color code.

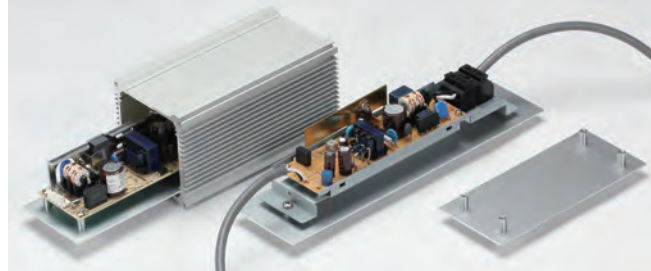


AWC series

ALUMINIUM MOUNTING PLATE for AW • AWN • AWP • AWA

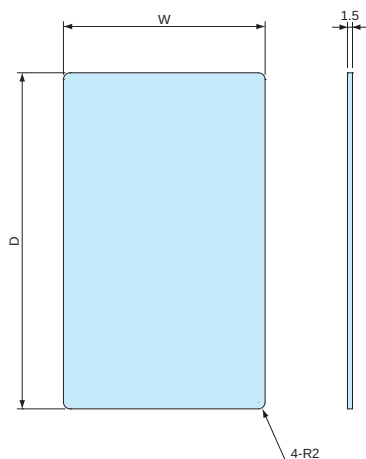


APPLICATION EXAMPLE



- Material: Aluminium A1050P t=1.5 / Silver anodized
- Mounting plate for AW, AWN, AWP, and AWA enclosures.
- Utilize for mounting PCB, power supply, terminal blocks, etc.

AWC dimensions



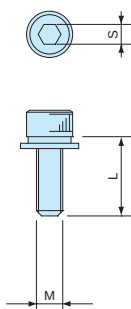
- DXF/DWG/PDF drawings available on our website.

Product no. / Details

Product no.	W	D	Suitable models
AWC 5- 7	38.9	49.2	AW • AWN 5-4- 7
AWC 5- 9	38.9	69.2	AW • AWN 5-4- 9
AWC 5-11	38.9	94.2	AW • AWN 5-4-11
AWC 5-14	38.9	119.2	AW • AWN 5-4-14
AWC 7- 8	47	64	AW • AWN 7-7- 8 • AWA 6-6- 7
AWC 7-11	47	94	AW • AWN 7-7-11 • AWA 6-6-10
AWC 7-15	47	134	AW • AWN 7-7-15 • AWA 6-6-14
AWC 7-20	47	184	AW • AWN 7-7-20 • AWA 6-6-19
AWC 7-25	47	234	AW • AWN 7-7-25 • AWA 6-6-24
AWC 8- 9	61.8	74	AW • AWN • AWP 8-5- 9 • AWA 8-4- 8
AWC 8-12	61.8	99	AW • AWN • AWP 8-5-12 • AWA 8-4-10
AWC 8-14	61.8	124	AW • AWN • AWP 8-5-14 • AWA 8-4-13
AWC 8-18	61.8	159	AW • AWN • AWP 8-5-18 • AWA 8-4-16
AWC 9-10	66.5	81	AW • AWN • AWP 9-9-10 • AWA 8-8- 9
AWC 9-13	66.5	106	AW • AWN • AWP 9-9-13 • AWA 8-8-11
AWC 9-17	66.5	151	AW • AWN • AWP 9-9-17 • AWA 8-8-16
AWC 9-22	66.5	201	AW • AWN • AWP 9-9-22 • AWA 8-8-21
AWC 9-28	66.5	256	AW • AWN • AWP 9-9-28 • AWA 8-8-26
AWC11-11	86.5	90.6	AW • AWN • AWP11-6-11 • AWA10-5-10
AWC11-15	86.5	130.6	AW • AWN • AWP11-6-15 • AWA10-5-14
AWC11-19	86.5	170.6	AW • AWN • AWP11-6-19 • AWA10-5-18
AWC11-24	86.5	220.6	AW • AWN • AWP11-6-24 • AWA10-5-23
AWC12-11	100.2	85.6	AW • AWN • AWP12-8-11 • AWA12-7- 9
AWC12-14	100.2	120.6	AW • AWN • AWP12-8-14 • AWA12-7-12
AWC12-17	100.2	160.1	AW • AWN • AWP12-8-17 • AWA12-7-17
AWC12-22	100.2	195.6	AW • AWN • AWP12-8-22 • AWA12-7-20
AWC16-14	136.3	115.6	AW • AWN • AWP16-9-14 • AWA15-8-12
AWC16-18	136.3	155.6	AW • AWN • AWP16-9-18 • AWA15-8-16
AWC16-23	136.3	205.6	AW • AWN • AWP16-9-23 • AWA15-8-21
AWC16-28	136.3	255.6	AW • AWN • AWP16-9-28 • AWA15-8-26
AWC21-17	186.1	147.8	AW • AWN • AWP21-9-17 • AWA20-8-15
AWC21-21	186.1	187.8	AW • AWN • AWP21-9-21 • AWA20-8-19
AWC21-26	186.1	237.8	AW • AWN • AWP21-9-26 • AWA20-8-24
AWC21-31	186.1	287.8	AW • AWN • AWP21-9-31 • AWA20-8-29

HCS series

HEXAGON SOCKET HEAD SCREW for AW • AWN



- Hexagon socket head screws for fastening the end panels of AW and AWN enclosures.
- Utilize for tamper-resistance functionality or for an elegant sleek look.

Product no. / Details

Product no.	M	L	S	Material	Pack of
HCS3-12S	3	12	2.5	Stainless steel	8
HCS4-12S	4	12	3	Stainless steel	8
HCS5-12S	5	12	4	Stainless steel	8



- Waterproof case available in 73 different sizes and 6 different color combinations.
- Equipped with flanged frame for easy wall mounting. Suitable to be used as wall mounted controller and transmitter.
- Custom length is available.

Technical Data

Protection class : IP65 • IP54
 Protection class varies by size.
 ■ Not suitable for environments with direct rainfall.
 Operating temperature: -10°C ~ +60°C

Included screws

EXWF7-□, 9-□ models : M2.5-8 x 8 pcs
 EXWF11-□, 15-□ models : M3-10 x 8 pcs
 EXWF20-□ models : M4-12 x 8 pcs
 EXWF24-□, 30-□ models : M5-12 x 8 pcs
 ※Hexagonal wrench included.

Components

No.	Part name	Pcs	Material	Color / Finish
1	Flanged end panel	2	PC+ABS Flame-resistant	Black • Gray / Unpainted Navy / Painted
2	Top cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized with clear coating
3	Bottom cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized with clear coating
4	Panel gasket	2	Silicone • EPDM sponge	Black
5	Cover gasket	2	Silicone sponge	White gray
6	Screw (Hexagonal)	8	Stainless steel	Unfinished
-	O-ring*	8	NBR	Black

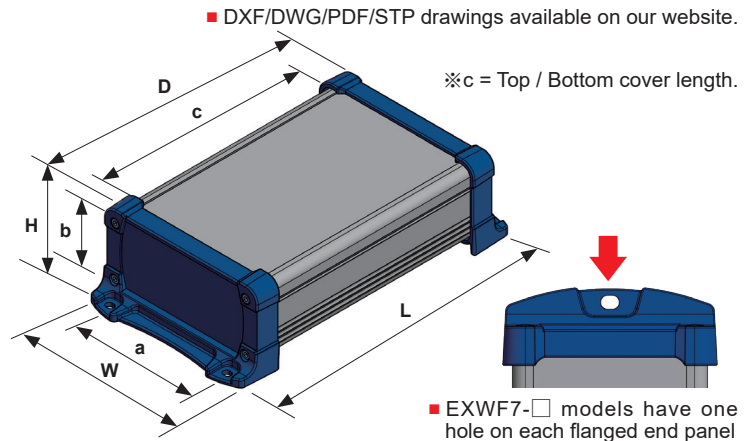
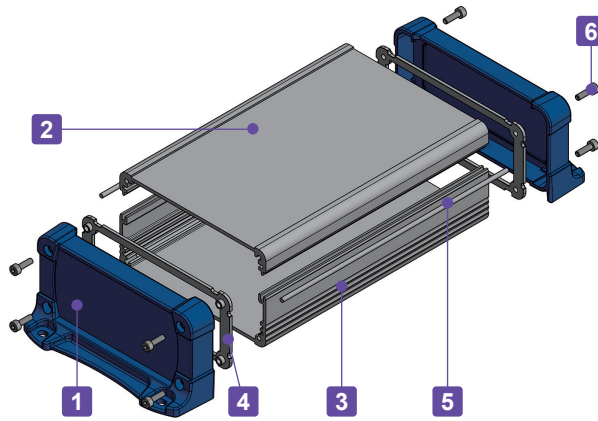
*O-ring is only available for EXWF20-□, 24-□, and 30-□ models.

■ Panel gasket material : Silicone : EXWF7-□ ~ 15-□ models • EPDM sponge : EXWF20-□ ~ 30-□ models.

Color Type

Code	[S] [B] Silver / Black	[S] [G] Silver / Gray	[S] [N] Silver / Navy
Color			
Code	[B] [B] Black / Black	[B] [G] Black / Gray	[B] [N] Black / Navy
Color			

EXWF dimensions

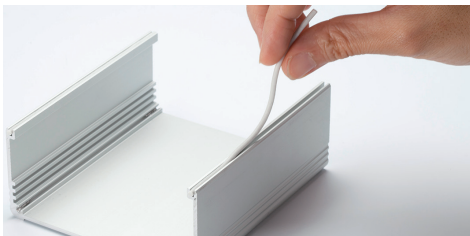


Product no. / Details

- Listed D dimension may vary due to expansion and contraction of gasket from screw tightening.
■ Please suffix color code at the end of the product number.

Product no.	IP Code	External dimensions				Internal dimensions			
		W	H	D	L	a	b	c	
EXWF 7- 3- 6□□	IP65	66	34	57	82	47	20	46	
EXWF 7- 3- 9□□	IP65	66	34	84	109	47	20	73	
EXWF 7- 3-11□□	IP65	66	34	107	132	47	20	96	
EXWF 7- 4- 6□□	IP65	66	44	57	82	47	30	46	
EXWF 7- 4- 9□□	IP65	66	44	84	109	47	30	73	
EXWF 7- 4-11□□	IP65	66	44	107	132	47	30	96	
EXWF 7- 6- 6□□	IP65	66	59	57	82	47	45	46	
EXWF 7- 6- 9□□	IP65	66	59	84	109	47	45	73	
EXWF 7- 6-11□□	IP65	66	59	107	132	47	45	96	
EXWF 9- 4- 7□□	IP65	86	39	68	94.8	67	25	56	
EXWF 9- 4-10□□	IP65	86	39	98	124.8	67	25	86	
EXWF 9- 4-13□□	IP65	86	39	128	154.8	67	25	116	
EXWF 9- 5- 7□□	IP65	86	49	68	94.8	67	35	56	
EXWF 9- 5-10□□	IP65	86	49	98	124.8	67	35	86	
EXWF 9- 5-13□□	IP65	86	49	128	154.8	67	35	116	
EXWF 9- 6- 7□□	IP65	86	64	68	94.8	67	50	56	
EXWF 9- 6-10□□	IP65	86	64	98	124.8	67	50	86	
EXWF 9- 6-13□□	IP65	86	64	128	154.8	67	50	116	
EXWF11- 4- 9□□	IP65	113	41.5	87	119.8	89	24	74	
EXWF11- 4-13□□	IP65	113	41.5	127	159.8	89	24	114	
EXWF11- 4-17□□	IP65	113	41.5	173	205.8	89	24	160	
EXWF11- 6- 9□□	IP65	113	56.5	87	119.8	89	39	74	
EXWF11- 6-13□□	IP65	113	56.5	127	159.8	89	39	114	
EXWF11- 6-17□□	IP65	113	56.5	173	205.8	89	39	160	
EXWF11- 7- 9□□	IP65	113	71.5	87	119.8	89	54	74	
EXWF11- 7-13□□	IP65	113	71.5	127	159.8	89	54	114	
EXWF11- 7-17□□	IP65	113	71.5	173	205.8	89	54	160	
EXWF15- 5-11□□	IP65	148	47	106	146.2	107	29	93	
EXWF15- 5-15□□	IP65	148	47	146	186.2	107	29	133	
EXWF15- 5-20□□	IP65	148	47	196	236.2	107	29	183	
EXWF15- 6-11□□	IP65	148	62	106	146.2	107	44	93	
EXWF15- 6-15□□	IP65	148	62	146	186.2	107	44	133	
EXWF15- 6-20□□	IP65	148	62	196	236.2	107	44	183	
EXWF15- 8-11□□	IP65	148	82	106	146.2	107	64	93	
EXWF15- 8-15□□	IP65	148	82	146	186.2	107	64	133	
EXWF15- 8-20□□	IP65	148	82	196	236.2	107	64	183	
EXWF15-10-11□□	IP65	148	102	106	146.2	107	84	93	
EXWF15-10-15□□	IP65	148	102	146	186.2	107	84	133	
EXWF15-10-20□□	IP65	148	102	196	236.2	107	84	183	
EXWF20- 6-14□□	IP54	195	57	138	186.6	132	35	120	
EXWF20- 6-19□□	IP54	195	57	190	238.6	132	35	172	
EXWF20- 6-25□□	IP54	195	57	243	291.6	132	35	225	
EXWF20- 6-30□□	IP54	195	57	298	346.6	132	35	280	
EXWF20- 8-14□□	IP54	195	75	138	186.6	132	53	120	
EXWF20- 8-19□□	IP54	195	75	190	238.6	132	53	172	
EXWF20- 8-25□□	IP54	195	75	243	291.6	132	53	225	
EXWF20- 8-30□□	IP54	195	75	298	346.6	132	53	280	
EXWF20-10-14□□	IP54	195	95	138	186.6	132	73	120	
EXWF20-10-19□□	IP54	195	95	190	238.6	132	73	172	
EXWF20-10-25□□	IP54	195	95	243	291.6	132	73	225	
EXWF20-10-30□□	IP54	195	95	298	346.6	132	73	280	
EXWF20-12-14□□	IP54	195	120	138	186.6	132	98	120	
EXWF20-12-19□□	IP54	195	120	190	238.6	132	98	172	
EXWF20-12-25□□	IP54	195	120	243	291.6	132	98	225	
EXWF20-12-30□□	IP54	195	120	298	346.6	132	98	280	
EXWF24- 7-17□□	IP54	240	65	165	213.6	177	43	147	
EXWF24- 7-23□□	IP54	240	65	225	273.6	177	43	207	
EXWF24- 7-29□□	IP54	240	65	285	333.6	177	43	267	
EXWF24- 7-35□□	IP54	240	65	345	393.6	177	43	327	
EXWF24- 9-17□□	IP54	240	90	165	213.6	177	68	147	
EXWF24- 9-23□□	IP54	240	90	225	273.6	177	68	207	
EXWF24- 9-29□□	IP54	240	90	285	333.6	177	68	267	
EXWF24- 9-35□□	IP54	240	90	345	393.6	177	68	327	
EXWF24-12-17□□	IP54	240	115	165	213.6	177	93	147	
EXWF24-12-23□□	IP54	240	115	225	273.6	177	93	207	
EXWF24-12-29□□	IP54	240	115	285	333.6	177	93	267	
EXWF24-12-35□□	IP54	240	115	345	393.6	177	93	327	
EXWF30- 9-25□□	IP54	298	93	247	295.6	231	68	228	
EXWF30- 9-32□□	IP54	298	93	317	365.6	231	68	298	
EXWF30- 9-40□□	IP54	298	93	397	445.6	231	68	378	
EXWF30-14-25□□	IP54	298	143	247	295.6	231	118	228	
EXWF30-14-32□□	IP54	298	143	317	365.6	231	118	298	
EXWF30-14-40□□	IP54	298	143	397	445.6	231	118	378	

How to install cover gaskets



- Insert cover gasket into the joint-grooves on the bottom cover.



- Ensure that a small portion of the cover gasket protrudes out in order to maintain a connection with the end panel.



- IP65 is made possible by the sealing of between top & bottom covers and end panels with gaskets.
- Available in 39 different sizes and 6 different color combinations by 2 body frame and 3 end panel colors.
- Custom length is available.

Technical Data

Protection class : IP65

■ Not suitable for environments with direct rainfall.

Operating temperature: -10°C ~ +60°C

Included screws

EXW7-□, 9-□ models : M2.5-8 x 8 pcs

EXW12-□, 15-□ models: M3-10 x 8 pcs

※Hexagonal wrench included.

Components

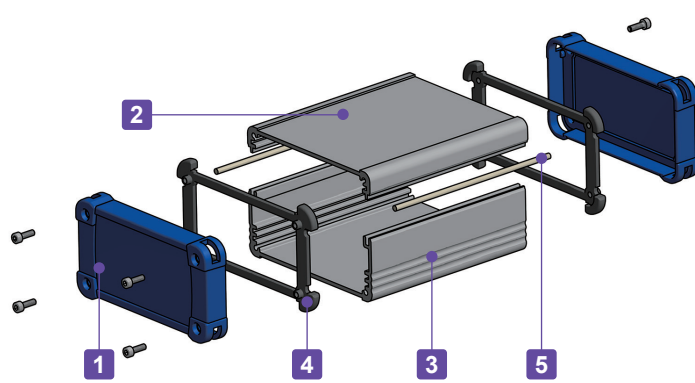
No.	Part name	Pcs	Material	Color / Finish
1	Panel	2	PC+ABS Flame-resistant	Black • Gray / Unpainted Navy / Painted
2	Top cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized with clear coating
3	Bottom cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized with clear coating
4	Panel gasket	2	Silicone	Dark gray • Black • Charcoal gray*
5	Cover gasket	2	Silicone sponge	White gray
6	Screw (Hexagonal)	8	Stainless steel	Unfinished

*Dark gray and black color panel gasket will be changed to charcoal gray upon depletion of inventory.

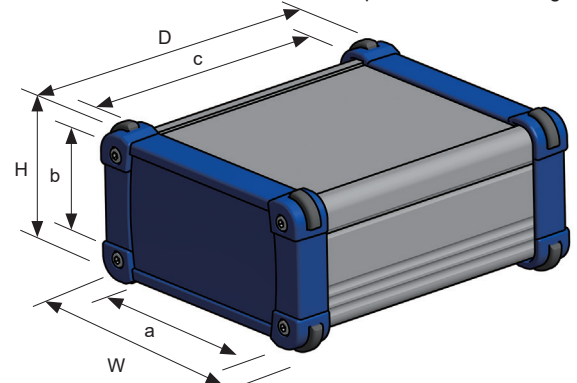
Color Type

Code	[S][B] Silver / Black	[S][G] Silver / Gray	[S][N] Silver / Navy
Color			
Code	[B][B] Black / Black	[B][G] Black / Gray	[B][N] Black / Navy
Color			

EXW dimensions



■ DXF/DWG/PDF/STP drawings available on our website.
※c = Top / Bottom cover length.



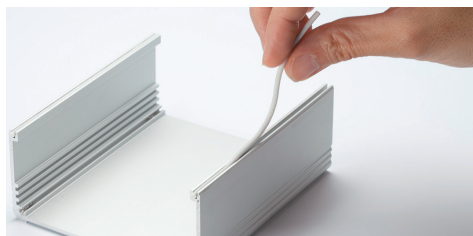
Product no. / Details

■ Listed D dimension may vary due to expansion and contraction of gasket from screw tightening.
■ Please suffix color code at the end of the product number.

Product no.	External dimensions			Internal dimensions		
	W	H	D	a	b	c
EXW 7- 3- 6□□	69	34	57	47	20	46
EXW 7- 3- 9□□	69	34	84	47	20	73
EXW 7- 3-11□□	69	34	107	47	20	96
EXW 7- 4- 6□□	69	44	57	47	30	46
EXW 7- 4- 9□□	69	44	84	47	30	73
EXW 7- 4-11□□	69	44	107	47	30	96
EXW 7- 6- 6□□	69	59	57	47	45	46
EXW 7- 6- 9□□	69	59	84	47	45	73
EXW 7- 6-11□□	69	59	107	47	45	96
EXW 9- 4- 7□□	89	39	68	67	25	56
EXW 9- 4-10□□	89	39	98	67	25	86
EXW 9- 4-13□□	89	39	128	67	25	116
EXW 9- 5- 7□□	89	49	68	67	35	56
EXW 9- 5-10□□	89	49	98	67	35	86
EXW 9- 5-13□□	89	49	128	67	35	116
EXW 9- 6- 7□□	89	64	68	67	50	56
EXW 9- 6-10□□	89	64	98	67	50	86
EXW 9- 6-13□□	89	64	128	67	50	116
EXW12- 4- 9□□	116	41	87	89	24	74
EXW12- 4-13□□	116	41	127	89	24	114
EXW12- 4-18□□	116	41	173	89	24	160
EXW12- 6- 9□□	116	56	87	89	39	74
EXW12- 6-13□□	116	56	127	89	39	114
EXW12- 6-18□□	116	56	173	89	39	160
EXW12- 7- 9□□	116	71	87	89	54	74
EXW12- 7-13□□	116	71	127	89	54	114
EXW12- 7-18□□	116	71	173	89	54	160
EXW15- 5-11□□	151	46	106	107	29	93
EXW15- 5-15□□	151	46	146	107	29	133
EXW15- 5-20□□	151	46	196	107	29	183
EXW15- 6-11□□	151	61	106	107	44	93
EXW15- 6-15□□	151	61	146	107	44	133
EXW15- 6-20□□	151	61	196	107	44	183
EXW15- 8-11□□	151	81	106	107	64	93
EXW15- 8-15□□	151	81	146	107	64	133
EXW15- 8-20□□	151	81	196	107	64	183
EXW15-10-11□□	151	101	106	107	84	93
EXW15-10-15□□	151	101	146	107	84	133
EXW15-10-20□□	151	101	196	107	84	183

■ Custom length is available

How to install cover gaskets



■ Insert cover gaskets into the joint-grooves on both sides of the bottom cover.



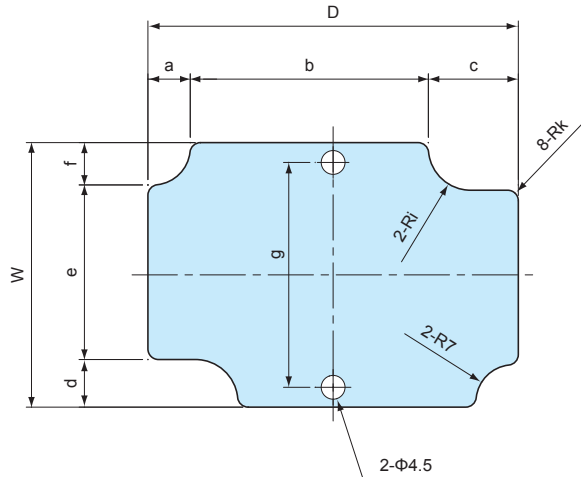
■ Ensure that a small portion of the cover gaskets protrude out in order to maintain connections with the end panels.

FTB SERIES

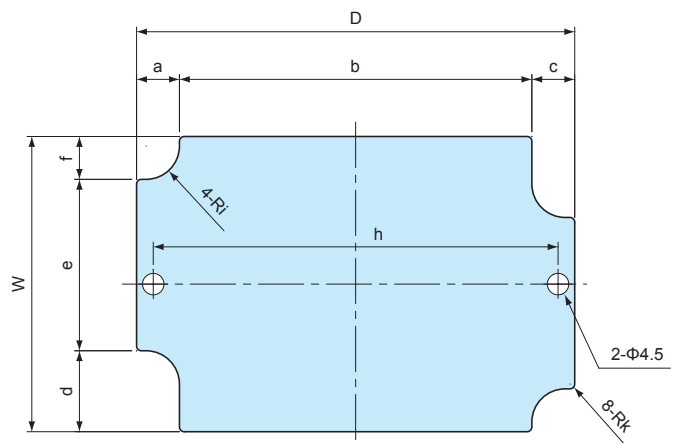
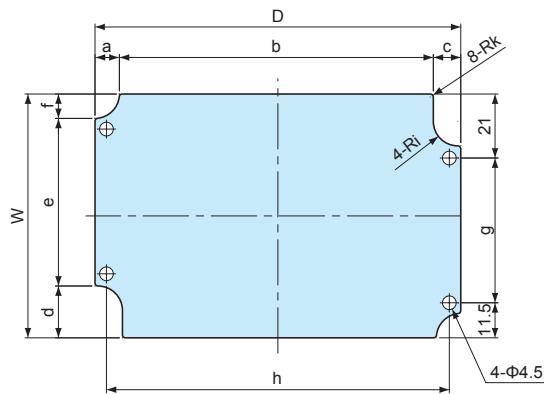
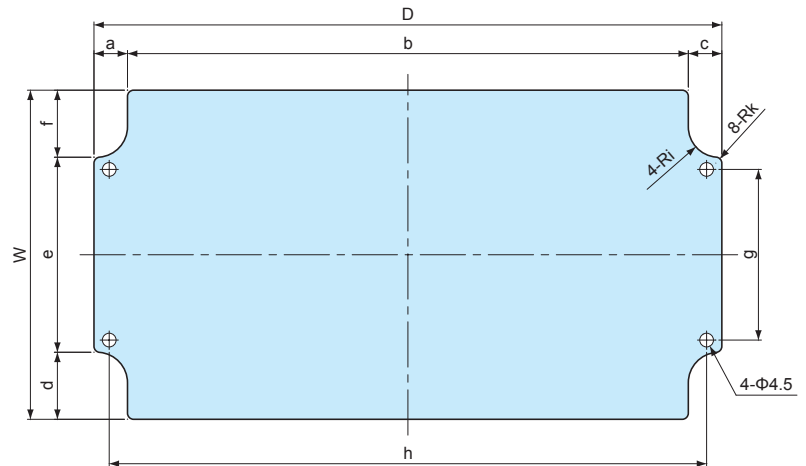
MOUNTING PLATE for BDN



FTB 5-7



FTB 6-9

FTB 8-12
FTB10-15FTB 8- 8 FTB10-20
FTB 9-13 FTB14-24

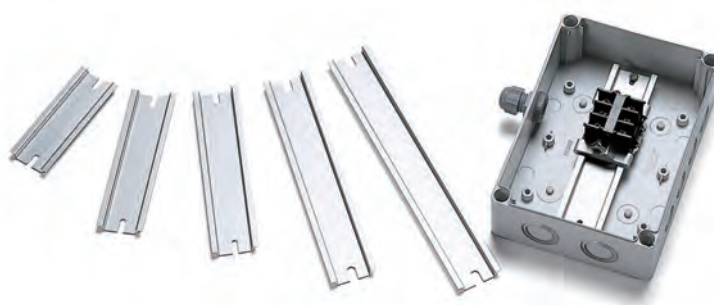
Material	Color / Finish
Aluminium A1050P t = 1.5	Silver / Anodized

Product no. / Dimensions

Product no.	Suitable box	W	D	a	b	c	d	e	f	g	h	i	k
FTB 5- 7	BDN 6- 8-5	50	70	8	45	17	9	33	8	42.5	-	8	2
FTB 6- 9	BDN 7-10-4	62	92	9	74	9	17	36	9	-	85	7	1
FTB 8- 8	BDN 9- 9-6	80	80	9	62	9	17	46	17	37	72.5	8	2
FTB 8-12	BDN 9-13-5	80	120	8	103	9	17	55	8	47.5	112.5	8	1
FTB 9-13	BDN10-14-7	89	129	9	111	9	17	55	17	48	121	8.5	2
FTB10-15	BDN11-16-6	100	150	8	133	9	17	75	8	67.5	142.5	8	1
FTB10-20	BDN12-22-8	108	206	11	184	11	22	64	22	56	196	10	2
FTB14-24	BDN16-26-9	144	244	15	214	15	30	84	30	72	230	12	3

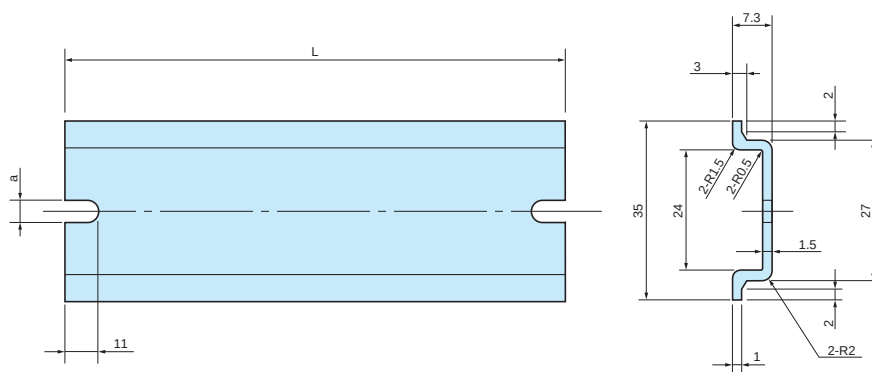
FDR series

DIN RAIL



Application example

- DIN Rail for installation of terminals, relays, or switches inside enclosures.
- Suitable for DIN Rail types of various manufacturers.



Product no. / Details

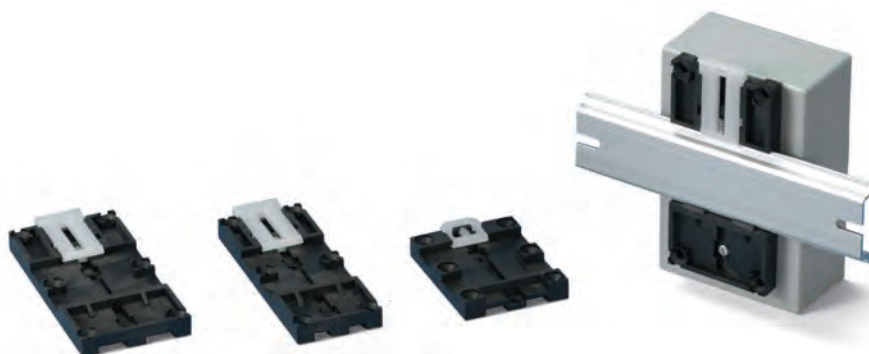
Product no.	L	a	Matching boss pitch	Weight
FDR- 50	50	4.2	32 ~ 42	8.6
FDR- 57	57	4.2	39 ~ 49	9.5
FDR- 66	66	4.2	48 ~ 58	10
FDR- 77	77	4.2	59 ~ 69	12
FDR- 80	80	4.2	62 ~ 72	13
FDR- 87	87	4.2	69 ~ 79	14
FDR- 92	92	4.2	74 ~ 84	15
FDR-100	100	4.2	82 ~ 92	17.8
FDR-106	106	4.2	88 ~ 98	19
FDR-110	110	4.2	92 ~ 102	20
FDR-120	120	4.2	102 ~ 112	21
FDR-128	128	4.2	110 ~ 120	23
FDR-137	137	4.2	119 ~ 129	24
FDR-142	142	4.2	124 ~ 134	25
FDR-146	146	4.2	128 ~ 138	26
FDR-150	150	4.2	132 ~ 142	25.8
FDR-168	168	4.2	150 ~ 160	30
FDR-170	170	4.2	152 ~ 162	30
FDR-186	186	4.2	168 ~ 178	32
FDR-202	202	4.2	184 ~ 194	37
FDR-205	205	4.2	187 ~ 197	36
FDR-223	223	4.2	205 ~ 215	39.3
FDR-226	226	4.2	208 ~ 218	39
FDR-235	235	4.2	217 ~ 227	42
FDR-242	242	4.2	224 ~ 234	43
FDR-249	249	4.2	231 ~ 241	43
FDR-283	283	4.2	265 ~ 275	49
FDR-300	300	4.2	282 ~ 292	52
NEW FDR-314	314	4.2	296 ~ 306	51.5
FDR-350	350	4.2	332 ~ 342	60
FDR-400	400	4.2	382 ~ 392	69
FDR-450	450	4.2	432 ~ 442	78
FDR-550	550	4.2	532 ~ 542	94

Product no.	L	a	Matching boss pitch	Weight
NEW FDR-B106	106	6.5	90 ~ 96	17.5
FDR-B124	124	6.5	108 ~ 114	21.4
FDR-B142	142	6.5	126 ~ 132	24
FDR-B160	160	6.5	144 ~ 150	28
FDR-B165	165	6.5	149 ~ 155	28
FDR-B176	176	6.5	160 ~ 166	30
FDR-B183	183	6.5	167 ~ 173	30
FDR-B196	196	6.5	180 ~ 186	33
FDR-B223	223	6.5	207 ~ 213	37
FDR-B256	256	6.5	240 ~ 246	43
FDR-B260	260	6.5	244 ~ 250	45
NEW FDR-B276	276	6.5	260 ~ 266	47.5
FDR-B303	303	6.5	287 ~ 293	52
NEW FDR-B327	327	6.5	311 ~ 317	56.2
FDR-B338	338	6.5	322 ~ 328	57
FDR-B360	360	6.5	344 ~ 350	63
FDR-B376	376	6.5	360 ~ 366	64
FDR-B383	383	6.5	367 ~ 373	65
FDR-B463	463	6.5	447 ~ 453	87
FDR-1000	1,000	—	—	169.5

- Material / Finish: A6063S-T5 / Silver anodized
- FDR-1000 does not have mounting holes.

DRA series

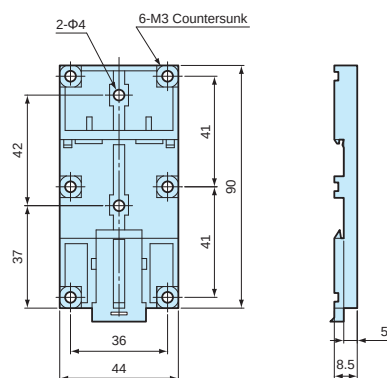
DIN-RAIL MOUNTING BASE



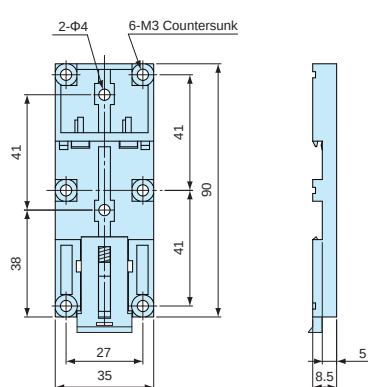
- For installation of enclosures, PCB and other parts onto a DIN rail.
- Simple installation and removal via the pull lever.

DRA dimensions

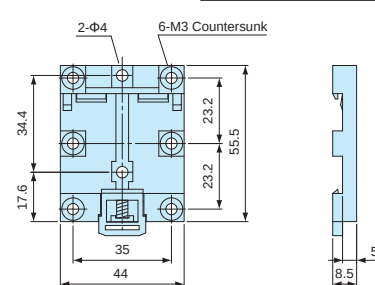
DRA-1



DRA-2

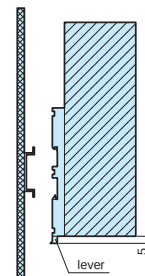


DRA-3



■ NOTE

Before installation, please ensure that the lever is not fully hidden behind the enclosure



Technical Data

Max load : 5kg

Product no. / Dimensions

Product no.	Material (body)	Material (lever)	Color	Weight (g)
DRA-1	PPE : SB UL94V-1	Nylon 66 UL94V-2	Black : White	16.4
DRA-2	PPE : SB UL94V-1	Nylon 66 UL94V-2	Black : White	14.5
DRA-3	PPE : SB UL94V-1	Nylon 66 UL94V-2	Black : White	10.4

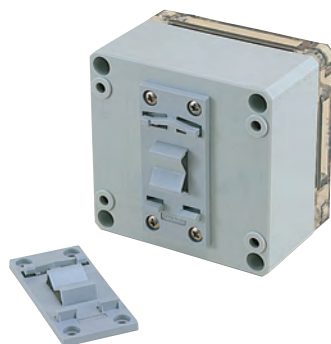
■ DXF/DWG/PDF drawings available on our website.

DRT series

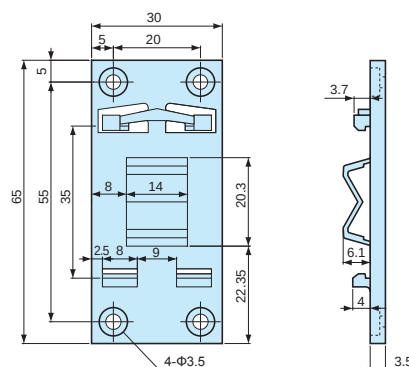
DIN-RAIL MOUNTING BASE

DRT dimensions

■ DXF/DWG/PDF drawings available on our website.

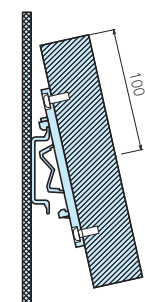


- For installation of enclosures, PCB and other parts onto a DIN rail.
- Simple installation and removal by tilting the case at an angle and sliding it in/out.



■ NOTE

Before installation, please ensure that the length (from top) of the enclosure is equal to, or less than 100mm from the center of the mounting base.



Technical Data

Max load : 1kg
Operating temperature: -20°C ~ +70°C

Product no. / Dimensions

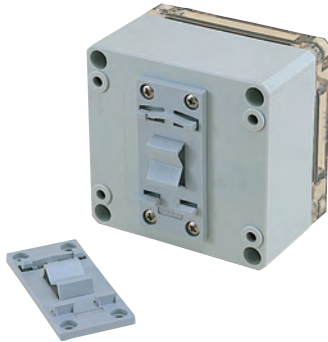
Product no.	Material	Color	Weight (g)
DRT-1	PC/ABS UL94V-0	Light gray	7.3

DRT series

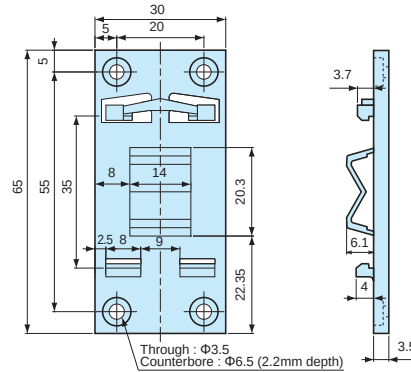
DIN RAIL MOUNTING BASE



Installation example

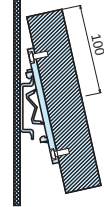


■ DXF/DWG/PDF/STP drawings available on our website.



■ NOTE

Before installation, please ensure that the length (from top) of the enclosure is equal to, or less than 100mm from the center of the mounting base.



- For installation of enclosures, PCB and other parts onto a DIN Rail.
- Simple installation and removal by tilting the case at an angle and sliding it in/out.

Technical Data

Max load : 1kg

Product no. / Details

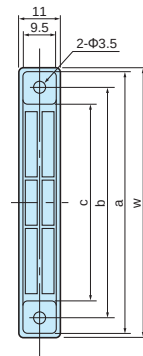
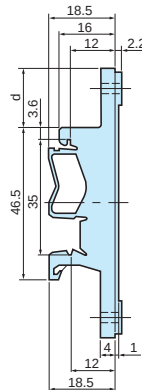
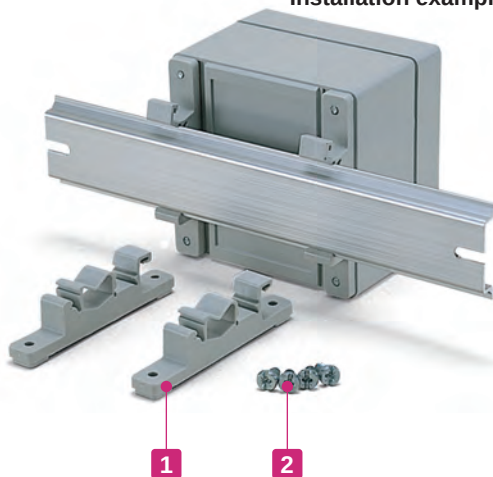
Product no.	Material	Color	Weight (g)	Pack of
DRT-1	PC/ABS UL94V-0	Light gray	7.3	1
DRT-1-P	PC/ABS UL94V-0	Light gray	7.3 (1pc)	50

CKD series

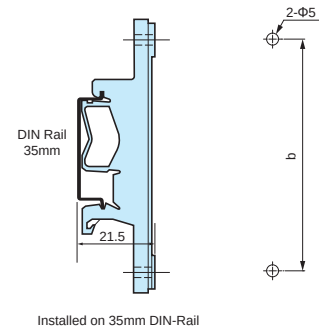
DIN RAIL MOUNTING FEET

Installation example

■ DXF/DWG/PDF drawings available on our website.



Hole layout for mounting



- Mounting feet for installation of enclosures, PCB and other parts onto a DIN Rail. Can be easily detached.

Technical Data

Max load : 3kg / 2pcs

Components

No.	Part name	Pcs	Material	Color / Finish
1	Mounting feet	2	Polyamide	White gray
2	Screw (special type 4.2 x 9.5)	4	Steel	Unichrome plated

Product no. / Details

Product no.	W	a	b	c	d	Weight (g)	Pack of
CKD-120	117	115	106	96	37	21 (2pcs)	2
CKD-160	157	155	147	136	57	24 (2pcs)	2



EMC
Shielding
Effects



IP67



Technical Data

Protection class : IP67
Operating temperature : -40°C ~ +105°C
Recommended torque : 1N • m

Silicone gasket (waterproof)

Stainless steel mesh gasket
(EMC Shielding)

- A double gasket construction allows both IP67 protection and EMC shielding to be possible.
- 13 different sizes available with 2 different finish types.
- Suitable for CATV terminal, fiber optic transmitter, FA controller, and so on.
- Available in powder coated model and unfinished model.

APPLICATION EXAMPLE

CATV OPTICAL NODE



LPWA OUTDOOR GATEWAY



WIFI ACCESS POINT

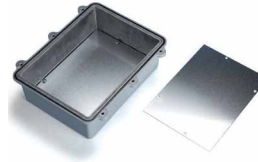
Accessories (Optional parts)



Mounting bracket HQF series
See page HQ-7



Pole Mounting bracket SSK series
See page SSK-M-1 ~ SSK-M-3



Mounting plate HQP series
See page HQ-8



Mounting screw MT series
See page HQ-7



Cable gland
See cable gland pages



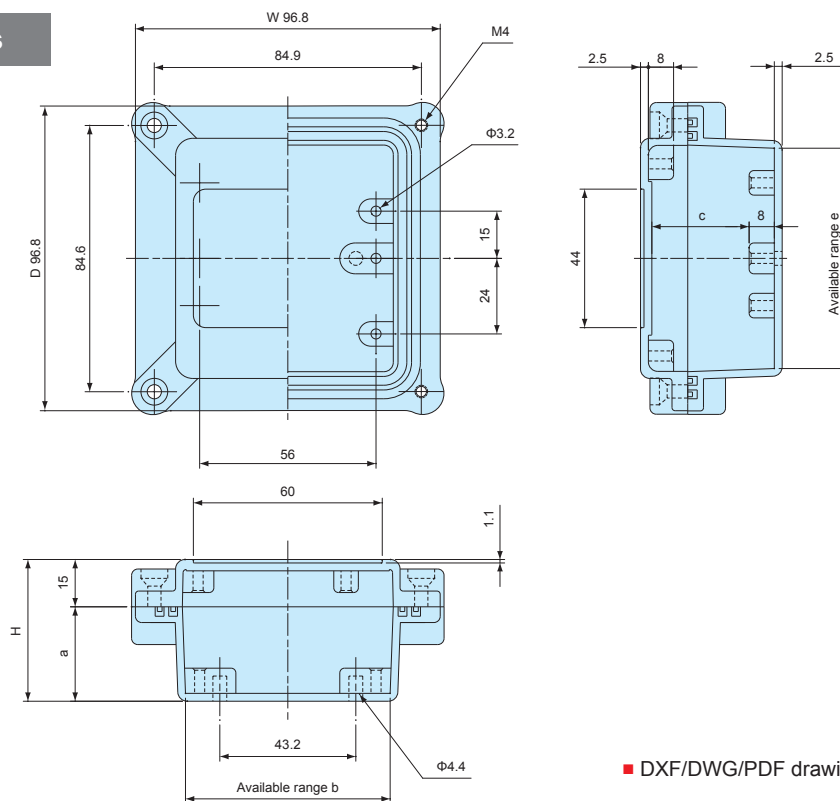
Protective vent PMF series
See PMF pages

Product no. / Dimensions

Product no.		Dimensions			Weight (g)
● Light gray	○ Unfinished	W	D	H	
HQ10-10- 5G	HQ10-10- 5N	96.3	96.8	45	302
HQ10-10- 7G	HQ10-10- 7N	96.8	96.8	67	335
HQ15-10- 5G	HQ15-10- 5N	150	100	50	442
HQ15-10- 8G	HQ15-10- 8N	150	99.5	75	494
HQ16-16- 6G	HQ16-16- 6N	162	162	55	626
HQ16-16- 8G	HQ16-16- 8N	162	162	80	715
HQ19-10- 5G	HQ19-10- 5N	192	96	45	507
HQ19-10- 7G	HQ19-10- 7N	192	96	67	590
HQ20-15- 5G	HQ20-15- 5N	200	150	50	753
HQ20-15- 8G	HQ20-15- 8N	200	150	75	849
HQ26-18- 6G	HQ26-18- 6N	262	181.5	55	961
HQ27-17- 7G	HQ27-17- 7N	274.2	173.2	66	1,129
HQ27-17-10G	HQ27-17-10N	274.2	172.7	100	1,287

HQ dimensions

HQ10-10-5
HQ10-10-7

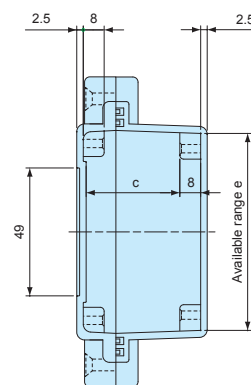
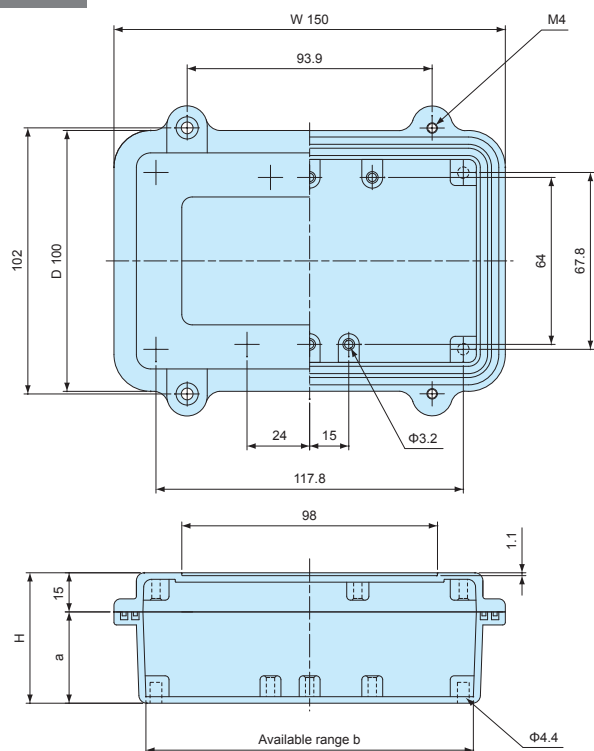


■ DXF/DWG/PDF drawings available on our website.

Product no.	W	D	H	a	b	c	e
HQ10-10- 5	96.3	96.8	45	30	64	30.9	69
HQ10-10- 7	96.8	96.8	67	52	64	52.9	69

HQ dimensions

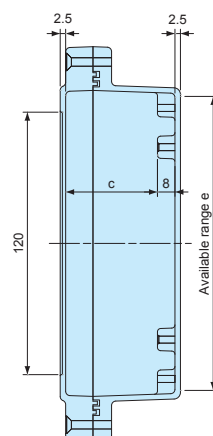
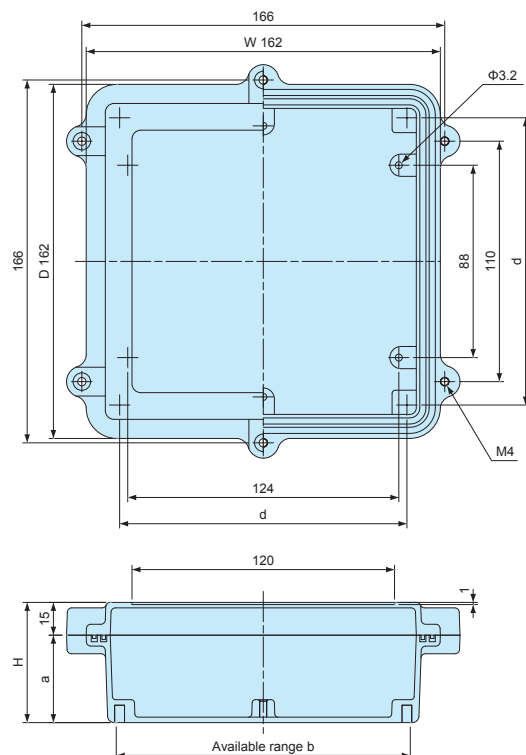
HQ15-10-5
HQ15-10-8



■ DXF/DWG/PDF drawings available on our website.

Product no.	W	D	H	a	b	c	e
HQ15-10- 5	150	100	50	35	125.5	35.9	75.5
HQ15-10- 8	150	99.5	75	60	123.7	60.9	73.7

HQ16-16-6
HQ16-16-8

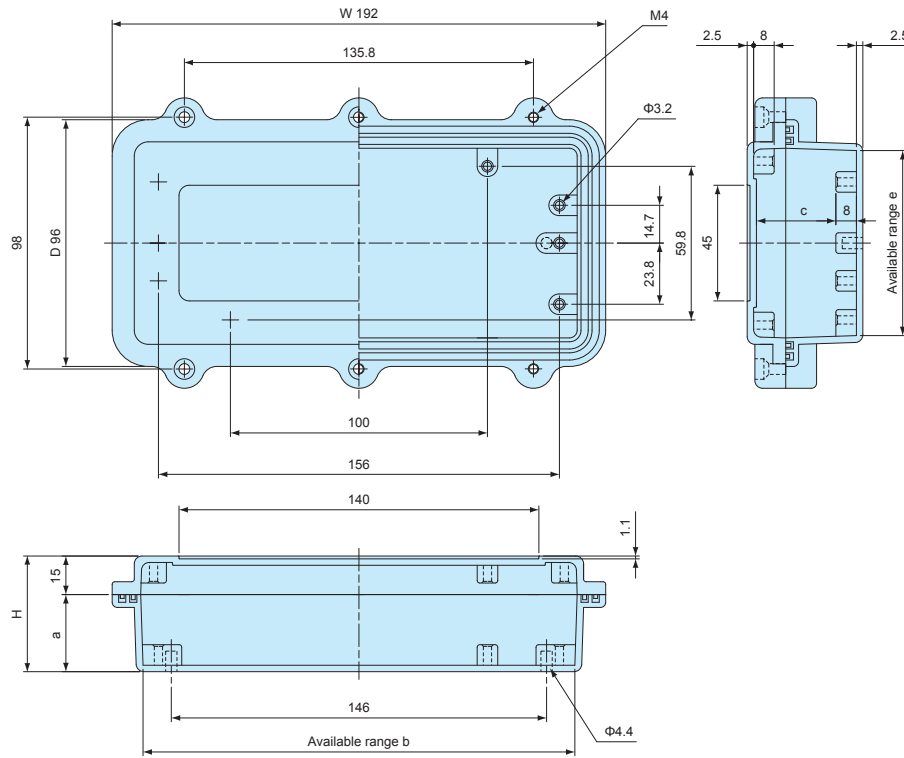


Product no.	W	D	H	a	b	c	d	e
HQ16-16- 6	162	162	55	40	134.5	42	131.41	134.5
HQ16-16- 8	162	162	80	65	132.7	67	129.66	132.7

HQ dimensions

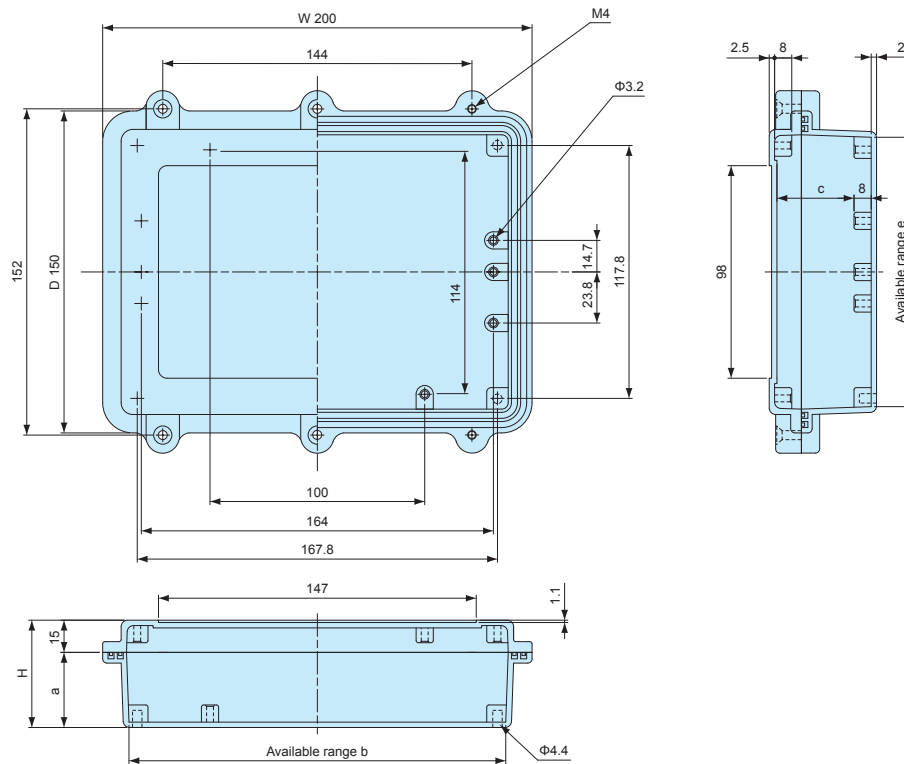
■ DXF/DWG/PDF drawings available on our website.

HQ19-10-5
HQ19-10-7



Product no.	W	D	H	a	b	c	e
HQ19-10- 5	192	96	45	30	168	30.9	72
HQ19-10- 7	192	96	67	52	166.6	52.9	70.6

HQ20-15-5
HQ20-15-8

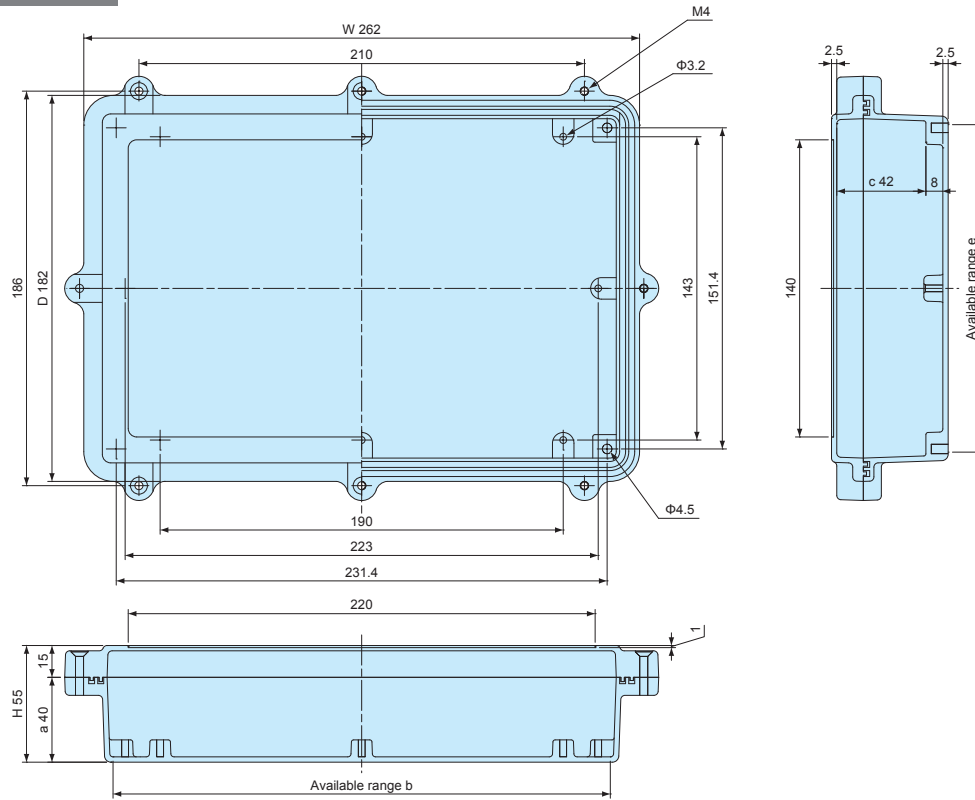


Product no.	W	D	H	a	b	c	e
HQ20-15- 5	200	150	50	35	175.5	35.9	125.5
HQ20-15- 8	200	150	75	60	173.7	60.9	123.7

HQ dimensions

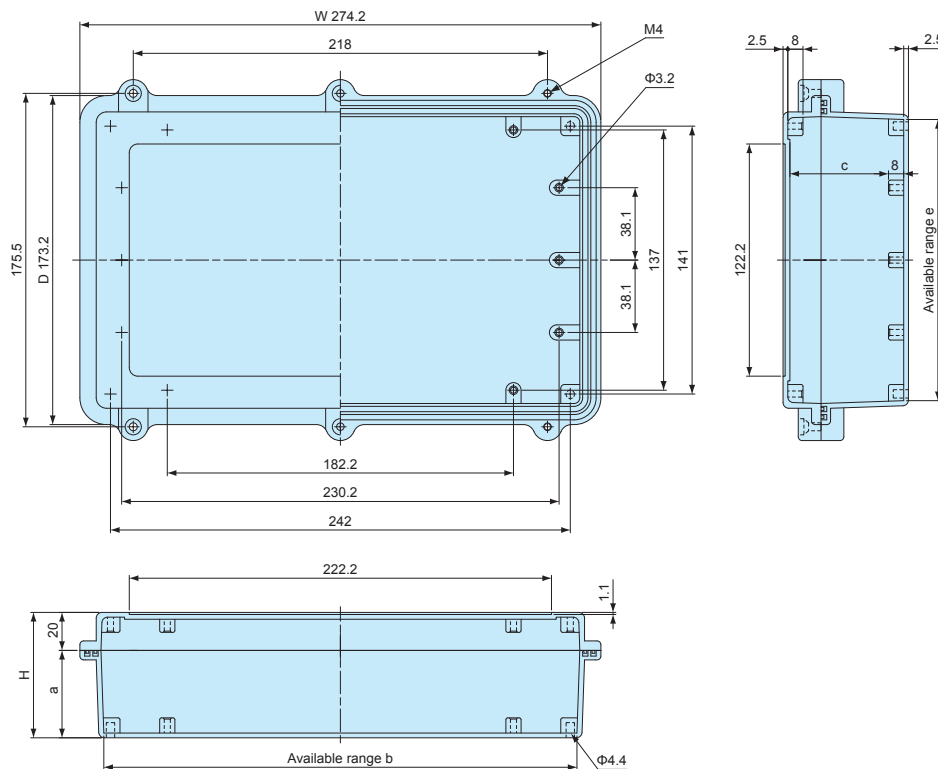
■ DXF/DWG/PDF drawings available on our website.

HQ26-18-6



Product no.	W	D	H	a	b	c	e
HQ26-18- 6	262	181.5	55	40	234.4	42	154.4

HQ27-17- 7
HQ27-17-10



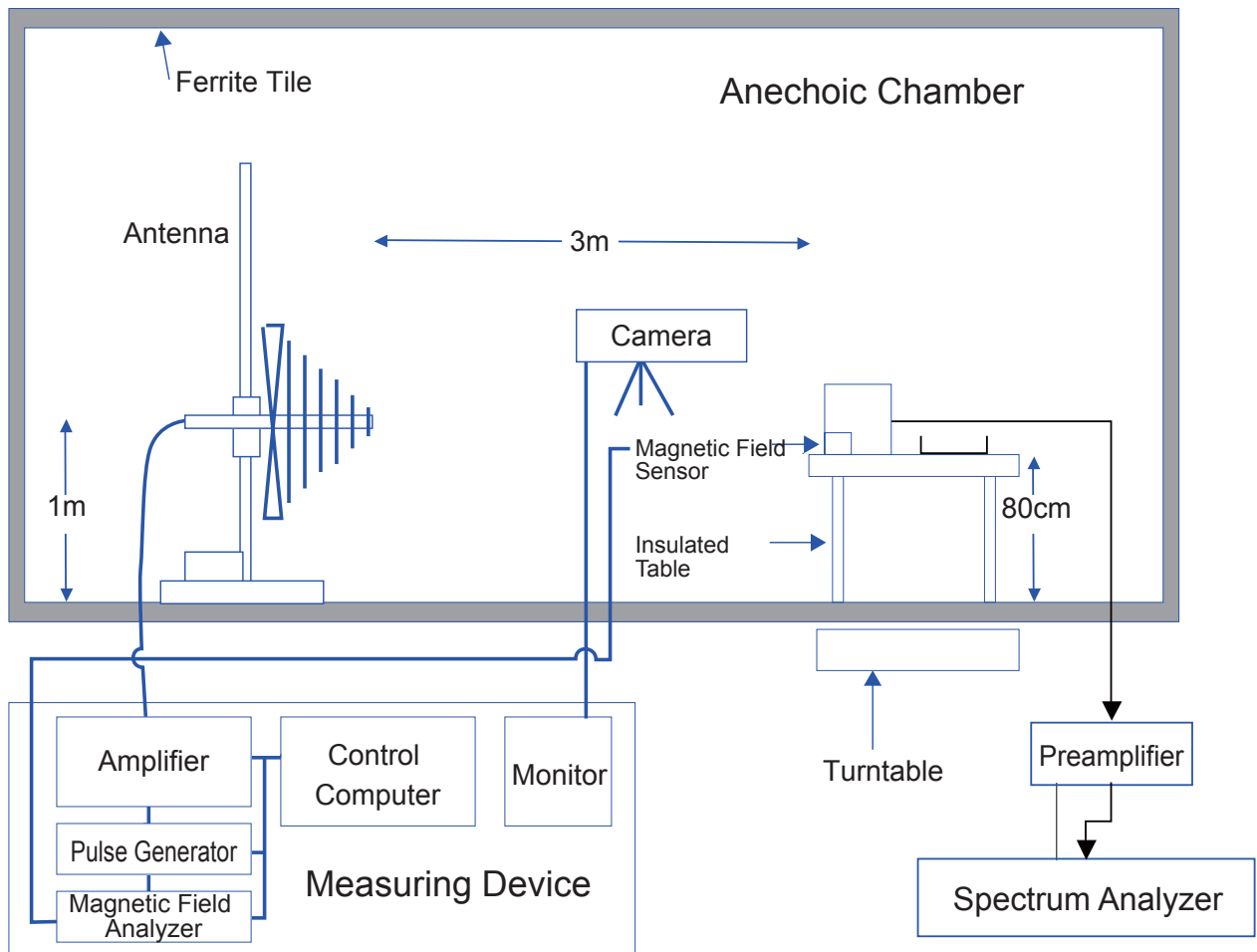
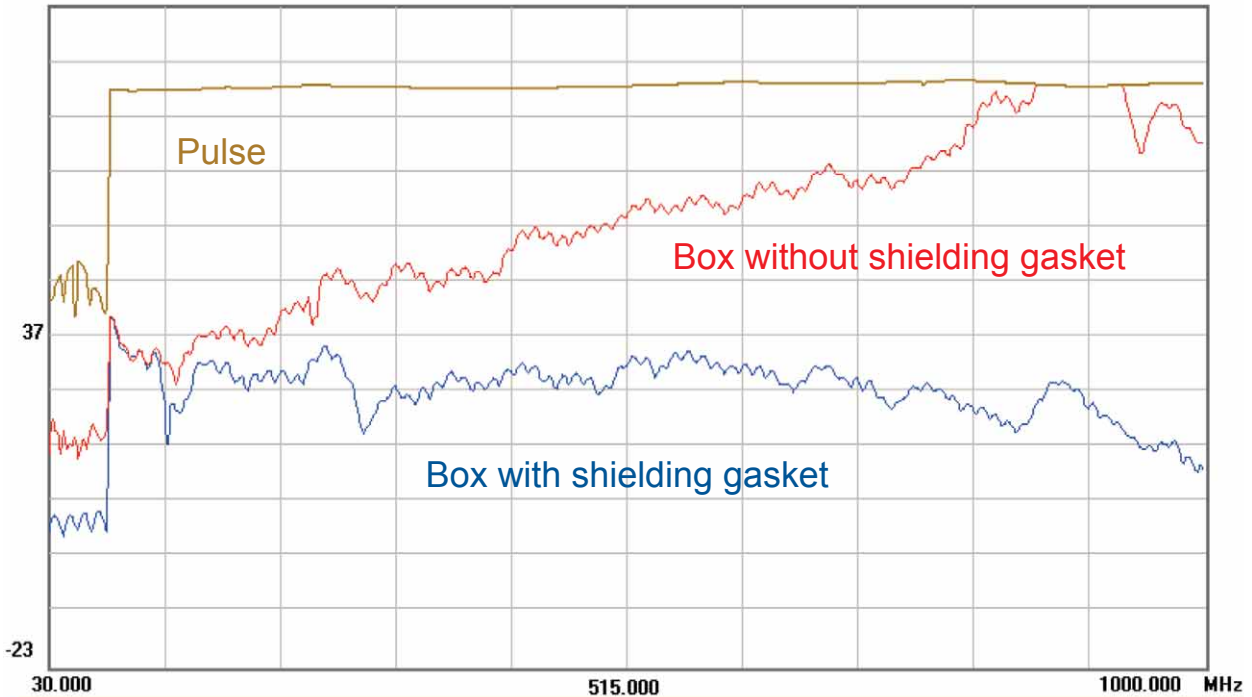
Product no.	W	D	H	a	b	c	e
HQ27-17- 7	274.2	173.2	66	46	249	51.9	148
HQ27-17-10	274.2	172.7	100	80	249	85.9	148

EMI SHIELDING TEST DATA

Test Result
by Gestek

97.0 dBuV/m

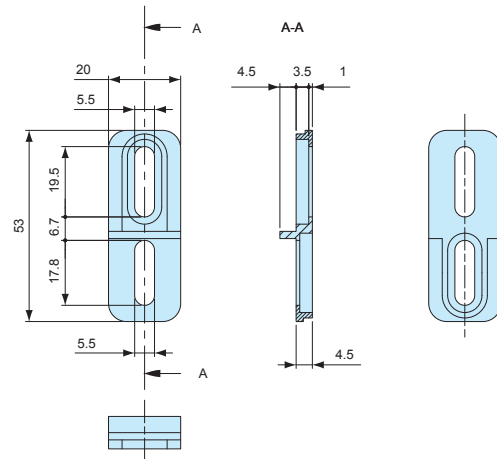
Date : 2007/12/20



HQF SERIES

MOUNTING BRACKET for HQ

■ DXF/DWG/PDF drawings available on our website.



Components

Part name	Pcs	Material	Color / Finish
Mounting bracket	4	Diecast aluminium ADC12	Powder coated • Unfinished
Screw	4	Stainless steel	Unfinished

Product no. / Feature

Product no.	Color / Finish	Suitable box	Pack of
HQF-1G	Light gray / Powder coated	HQ all models	4
HQF-1N	Unfinished	HQ all models	4

MT SERIES

MOUNTING SCREW for HQ



Product no. / Feature

Product no.	Material	Color / Finish	Pack of
MT3.5-8K	Steel	Trivalent chromate	4

HQG SERIES

WATERPROOF GASKET for HQ



Product no. / Suitable box

Product no.	Suitable box
HQG1010	HQ10-10-□
HQG1510	HQ15-10-□
HQG1616	HQ16-16-□
HQG1910	HQ19-10-□
HQG2015	HQ20-15-□
HQG2618	HQ26-18-□
HQG2717	HQ27-17-□

■ Material : Silicone

HQE SERIES

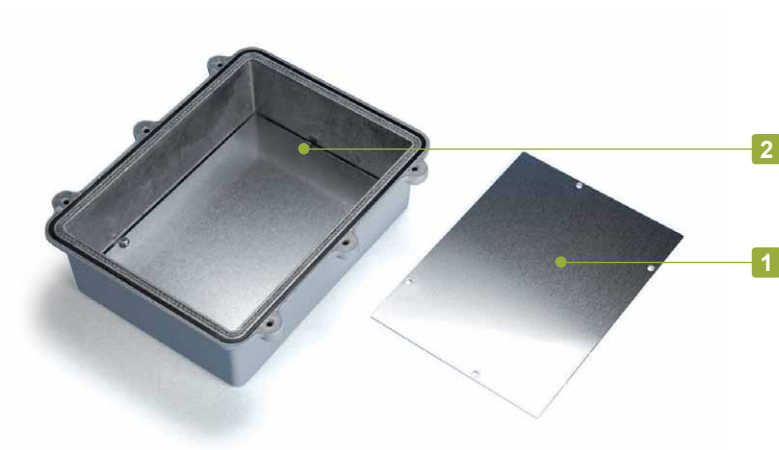
SHIELDING GASKET for HQ



Product no. / Suitable box

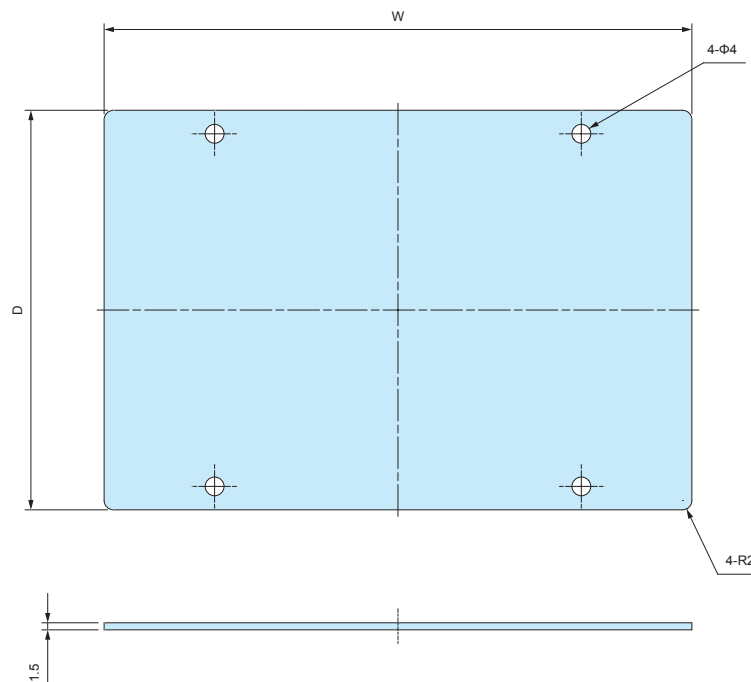
Product no.	Suitable box
HQE1010	HQ10-10-□
HQE1510	HQ15-10-□
HQE1616	HQ16-16-□
HQE1910	HQ19-10-□
HQE2015	HQ20-15-□
HQE2618	HQ26-18-□
HQE2717	HQ27-17-□

■ Material : Stainless steel • Silicone (White)

HQP SERIES**MOUNTING PLATE** for HQ**Components**

No.	Part name	Pcs	Material	Color / Finish
1	Mounting plate	1	Aluminium A1050P t = 1.5	Unfinished
2	Screw (MT3.5-8K)	4	Steel	Trivalent chromate

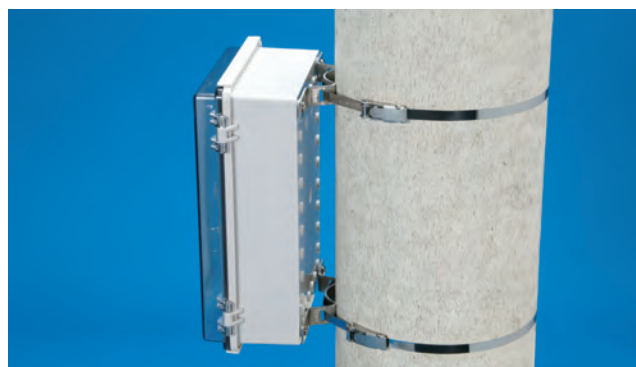
■ Drawings below are reference examples only.
DXF/DWG/PDF drawings available on our website.

**Product no. / Dimensions**

Product no.	W	D	Suitable box
HQP10-10	63	68	HQ10-10-5 • HQ10-10-7
HQP15-10	122	72	HQ15-10-5 • HQ15-10-8
HQP16-16	132	132	HQ16-16-6 • HQ16-16-8
HQP19-10	166	70	HQ19-10-5 • HQ19-10-7
HQP20-15	172	122	HQ20-15-5 • HQ20-15-8
HQP26-18	235	155	HQ26-18-6
HQP27-17	248	147	HQ27-17-7 • HQ27-17-10

SSK series

POLE MOUNTING BRACKET for BCAP • BCAR • BCPC • BCPK • BCPR



- Stainless steel pole mounting bracket for BCAP • BCAR • BCPC • BCPK • BCPR series.
- No hole milling is required for maintaining the IP rating of the boxes.
- SSK-P models come with plastic brackets.

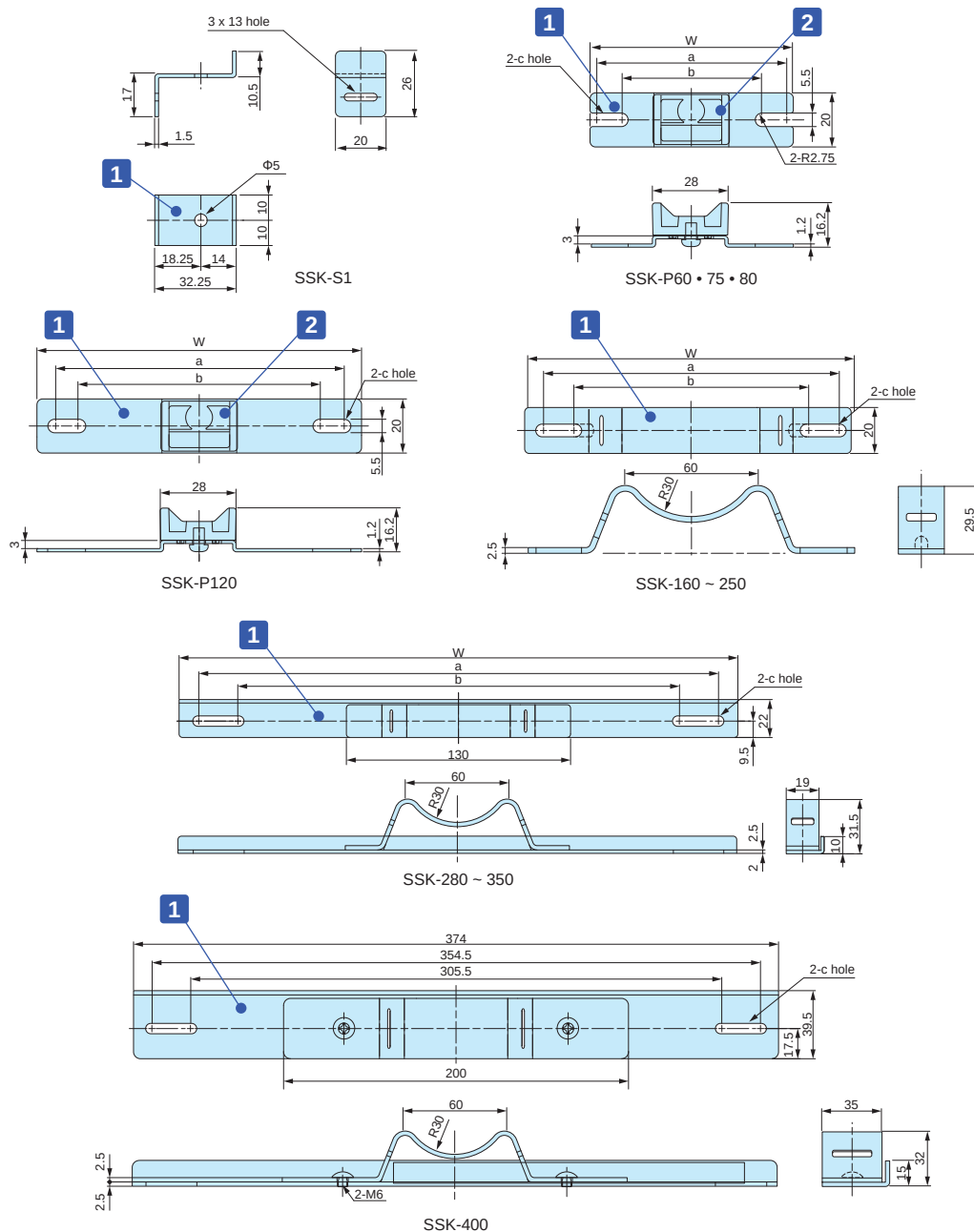
APPLICATION EXAMPLE

Weather Station Data Logger



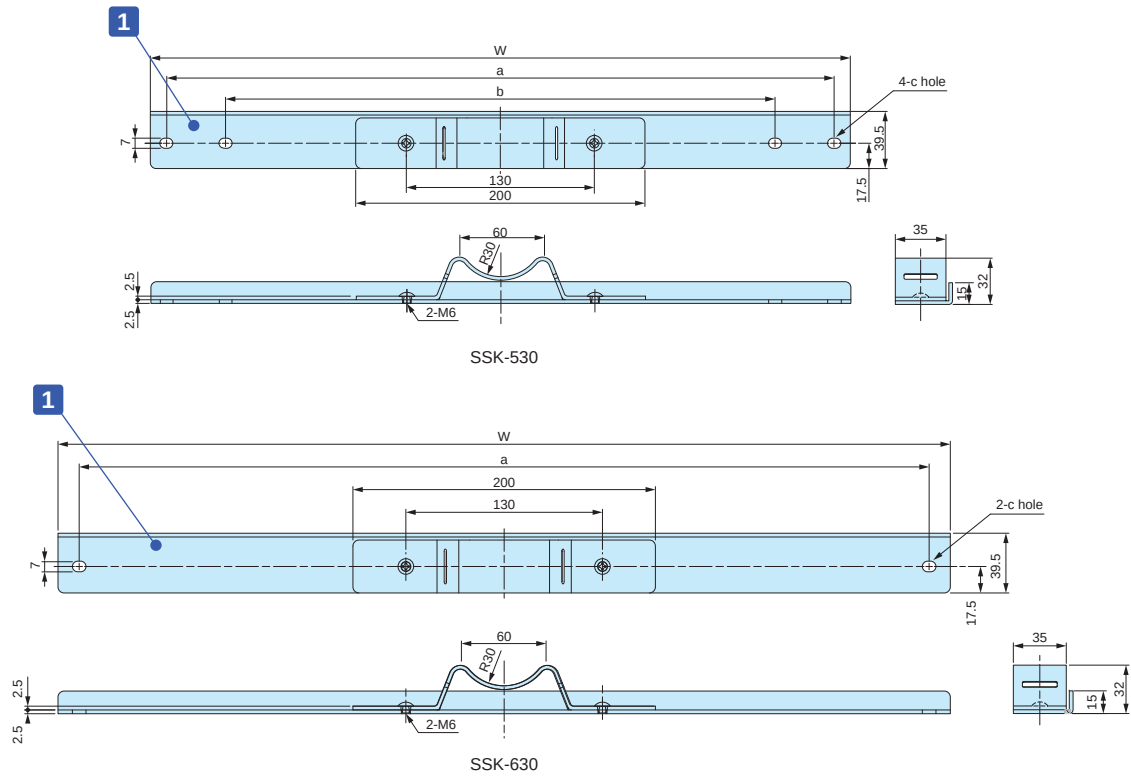
SSK dimensions

■ DXF/DWG/PDF drawings available on our website.



Water Level Detector





■ DXF/DWG/PDF drawings available on our website.

Components

No.	Part name	Pcs	Material	Color / Finish
1	Mounting bracket	2 / 4	Stainless steel SUS304	Barrel finish
2	Plastic bracket (SSK-P only)	2	ASA UL94HB	White gray
-	Screw	4	Stainless steel	Unfinished

Product no. / Details

Product no.	W	a	b	c	Suitable models BCAP • BCAR • BCPC • BCPK • BCPR	Belt to use with	Pack of
SSK-S1	—	—	—	—	0912, 1015, 1121, 1126, 1315, 1318, 1621, 1626, 1722, 1727, 2121	PKB10PM, 10P, PKB10S, SNB series	4
SSK-P60	60	54.5	47.5	5.5 x 9	0912	PKB10PM, 10P, PKB10S	2
SSK-P75	75	69.5	55.5	5.5 x 12.5	1015	PKB10PM, 10P, PKB10S	2
SSK-P80	80	74.5	64.5	5.5 x 10.5	1121, 1126	PKB10PM, 10P, PKB10S	2
SSK-P120	120	106.5	88.5	5.5 x 14.5	1315, 1318	PKB10PM, 10P, PKB10S	2
SSK-160	142	129.5	106.5	—	1515, 1621, 1626	PKB10PM, 10P, PKB10S, SNB series	2
SSK-170	152	142.3	101	—	1722, 1727	PKB10PM, 10P, PKB10S, SNB series	2
SSK-200	174	161.5	112.5	5.5 x 30	1928, 2030	PKB10PM, 10P, PKB10S, SNB series	2
SSK-210	192	180.5	131.5	5.5 x 30	2121	PKB10PM, 10P, PKB10S, SNB series	2
SSK-250	230	215.5	166.5	5.5 x 30	2535	PKB10PM, 10P, PKB10S, SNB series	2
SSK-280	260	244.5	195.5	5.5 x 30	2828, 2838	PKB10PM, 10P, PKB10S, SNB series	2
SSK-300	280	264.5	215.5	5.5 x 30	3030, 3040	PKB10PM, 10P, PKB10S, SNB series	2
SSK-350	324	302.5	253.5	5.5 x 30	3535, 3545	PKB10PM, 10P, PKB10S, SNB series	2
SSK-400	374	354.5	305.5	5.5 x 30	4050, 4060	PKB20S, SNB series	2
SSK-530	484	462	380	7 x 9	5060, 5070	PKB20S, SNB series	2
SSK-630	590	562	—	7 x 9	6080	PKB20S, SNB series	2



SNB series



PKB-10PM, 10P



PKB-10S, 20S

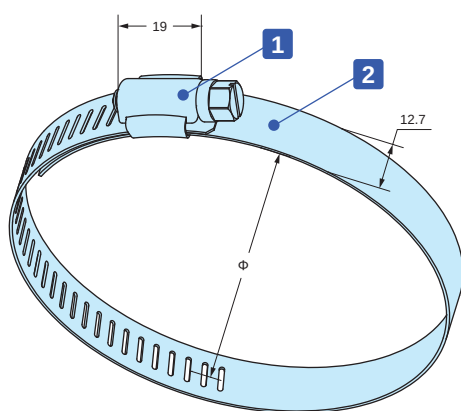
■ Pole mounting strap and belt, SNB and PKB series are sold separately. See page 207 ~ 208 for further details.

SNB series

STAINLESS STEEL POLE MOUNTING STRAP



SNB dimensions



- Corrosion resistant stainless steel (SUS304) belt clamp.
- It can be installed securely by tightening the screw.
- 8 mm nut driver (box driver) is recommended for tightening.
Flat-bladed screwdrivers can also be used.

Components

No.	Part name	Pcs	Material	Finish
1	Bracket	1	Stainless steel SUS304	Polished
2	Strap	1	Stainless steel SUS304	Polished

Product no. / Details

Product no.	Applicable diameter (Φ)	Strap width	Strap thickness	Recommended torque N • m	Weight (g)	Pack of
SNB 52- 76	52 ~ 76	12.7	0.6	0.7 ~ 1.0	27.5	1
SNB 72- 95	72 ~ 95	12.7	0.6	0.7 ~ 1.0	30	1
SNB 91-114	91 ~ 114	12.7	0.6	0.7 ~ 1.0	34.5	1
SNB105-127	105 ~ 127	12.7	0.6	0.7 ~ 1.0	37.5	1
SNB117-140	117 ~ 140	12.7	0.6	0.7 ~ 1.0	39.5	1
SNB130-153	130 ~ 153	12.7	0.6	0.7 ~ 1.0	41.5	1
SNB142-165	142 ~ 165	12.7	0.6	0.7 ~ 1.0	43.5	1
SNB155-178	155 ~ 178	12.7	0.6	0.7 ~ 1.0	46.5	1
SNB168-191	168 ~ 191	12.7	0.6	0.7 ~ 1.0	49	1
SNB181-204	181 ~ 204	12.7	0.6	0.7 ~ 1.0	51	1
SNB194-217	194 ~ 217	12.7	0.6	0.7 ~ 1.0	52.5	1
SNB207-230	207 ~ 230	12.7	0.6	0.7 ~ 1.0	57	1
SNB220-243	220 ~ 243	12.7	0.6	0.7 ~ 1.0	59.5	1
SNB233-256	233 ~ 256	12.7	0.6	0.7 ~ 1.0	62.5	1
SNB246-269	246 ~ 269	12.7	0.6	0.7 ~ 1.0	64	1
SNB259-282	259 ~ 282	12.7	0.6	0.7 ~ 1.0	67.5	1
SNB272-295	272 ~ 295	12.7	0.6	0.7 ~ 1.0	70	1
SNB285-308	285 ~ 308	12.7	0.6	0.7 ~ 1.0	71	1

■ Recommended torque listed is for reference only; actual may differ. Assemble after testing torque.

SNB Strap required

Suitable series	Suitable models						Required
SSK series	SSK-S1	SSK-160	SSK-170	SSK-200	SSK-210	SSK-250	2
	SSK-280	SSK-300	SSK-350	SSK-400	SSK-530		
WGMB series	WGMB-1W						1

PKB series

POLE MOUNTING BELT



PKB-10PM, 10P



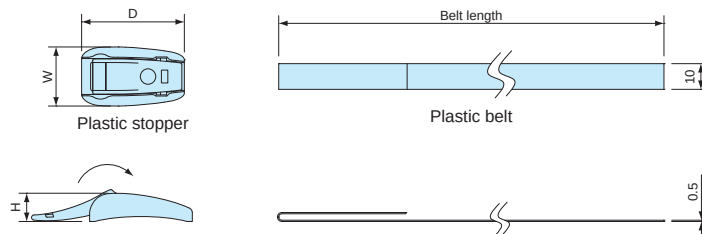
PKB-10S, 20S

- Pole mounting belt for attachment of enclosures with suitable pole mount brackets or construction onto poles.
- Designed for one time use only (not reusable).
- Strong stainless steel clamping type and easy installation plastic type are available.

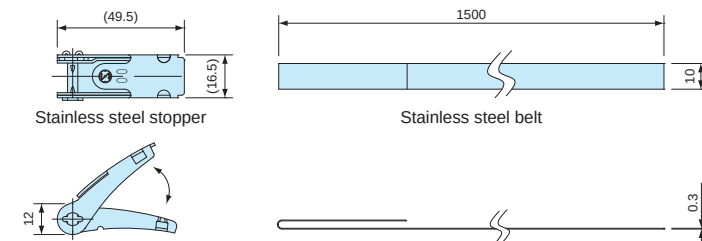
PKB dimensions

■ DXF/DWG/PDF drawings available on our website.

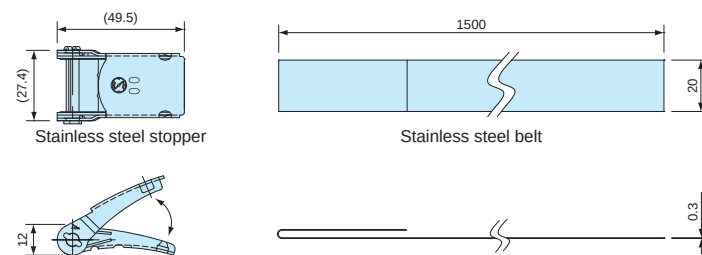
PKB-10PM, 10P



PKB-10S



PKB-20S



Components

Part name	Material	Color / Finish
Stopper	Stainless steel SUS304 • POM	Barrel finish • Black
Belt	Stainless steel SUS430 • PET	Bright annealed finish • Gray

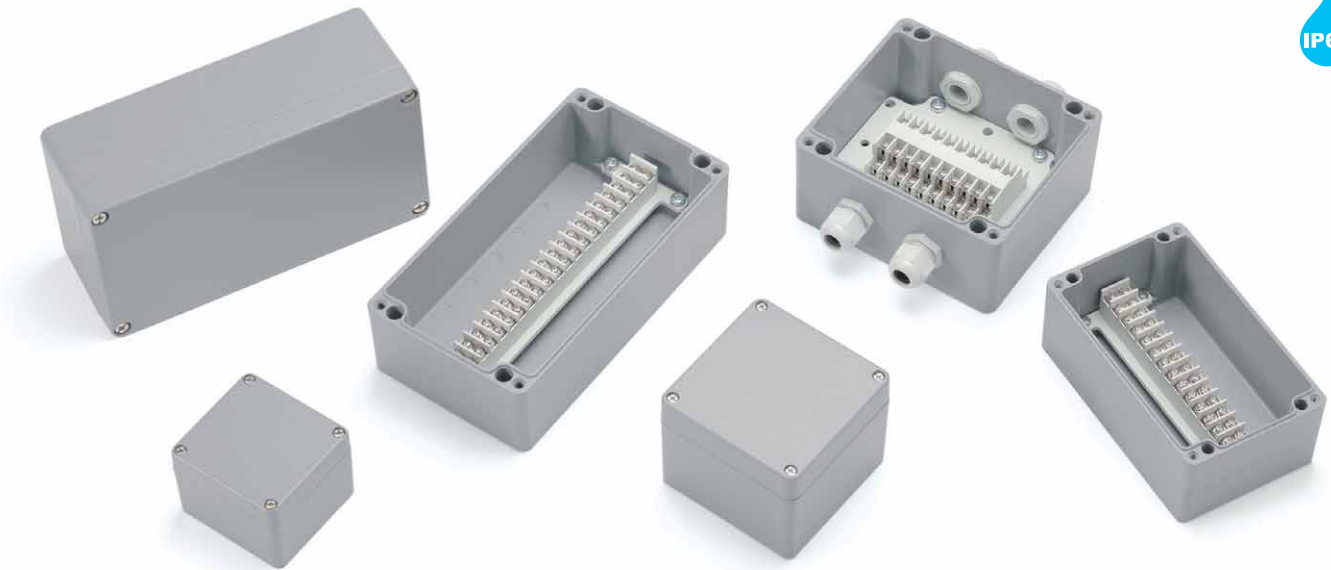
Product no. / Details

Product no.	W	D	H	Belt length	Belt material	Tensile strength (horizontal)	Weight (g)	Pack of
PKB-10PM	23	24	11	500 mm	PET	0.8kN	14	2
PKB-10P	23	40	11	1,500 mm	PET	1.3kN	31.8	2
PKB-10S	—	—	—	1,500 mm	Stainless steel SUS304	1.4kN	101.6	2
PKB-20S	—	—	—	1,500 mm	Stainless steel SUS430	2.9kN	182.2	2

TMA SERIES

DIECAST ALUMINIUM TERMINAL JUNCTION BOX

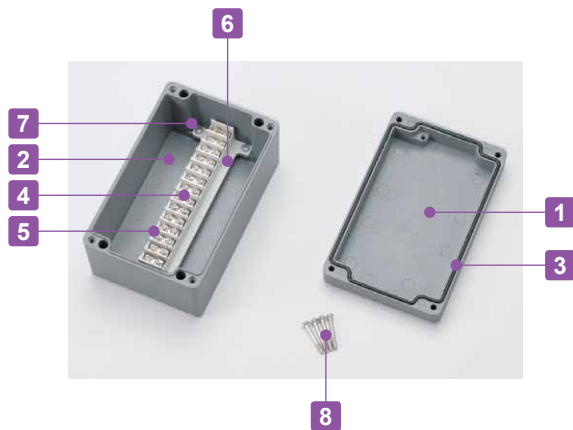
IP65



- IP65 protection class and impact resistant diecast aluminium terminal junction box.
- Diecast aluminum box has superior heat dissipation, heat resistance, and oil resistance compared to plastic box.
- Available in 6 different sizes with 6 to 30 poles configurations.

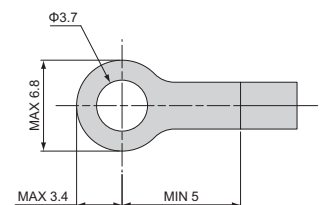
Technical Data

Protection class: IP65
 Operating temperature: -40°C ~ +80°C
 Recommended torque: 1N • m



Terminal Block Specification

Rated voltage	400V
Rated current	17.5A
Applicable wire	1.5mm ²
Standard tightening torque	0.8N • m

Applicable crimp terminal
R1.25-3.5

Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	Diecast aluminium	Light gray / Painted
2	Body	1	Diecast aluminium	Light gray / Painted
3	Gasket	1	Polyurethane	Black
4	Conductive plate	6 ~ 30	Brass	Nickel plated
5	Terminal screw (M3.5 Pan head)	12 ~ 60	Steel	Nickel plated
6	Terminal base	1	PBT (UL94V-0)	Light gray
7	Terminal mount screw (M4 • M6 Pan head)	2 ~ 4	Steel	Trivalent chromate
8	Cover screw	4	Stainless steel	Unfinished

Accessories (Optional parts)



Shorting bar SBR series
 See page SBR-1

Cable gland
 See cable gland pages

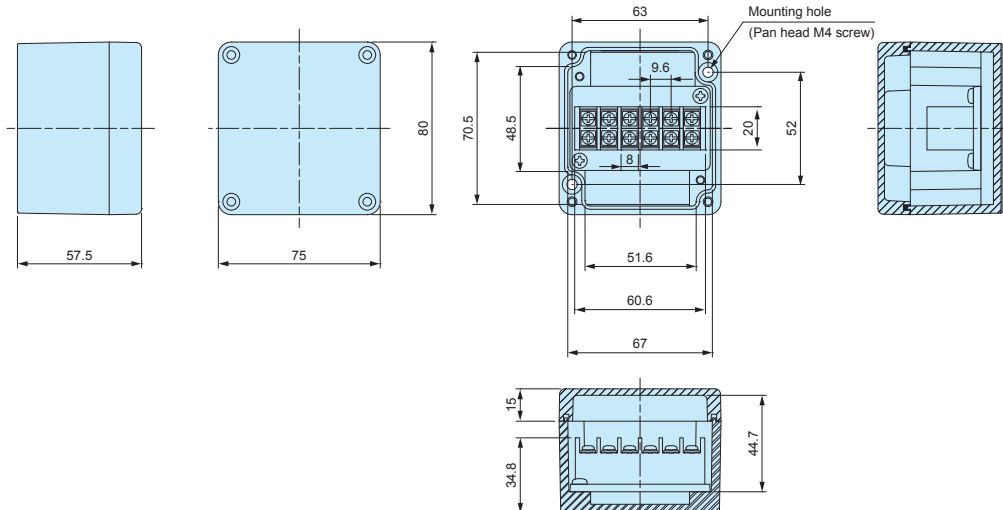
Product no. / Dimensions

Product no.	L	W	H	Number of poles	Weight (g)
TMA- 6P	80	75	57.5	6P	341
TMA- 9P	100	100	80	9P	642
TMA-15P	100	160	80	15P	867
TMA-20P-AS	132	150	90	10P × 2	1,394
TMA-20P	120	220	80	20P	1,426
TMA-30P-AS	120	220	80	15P × 2	1,529

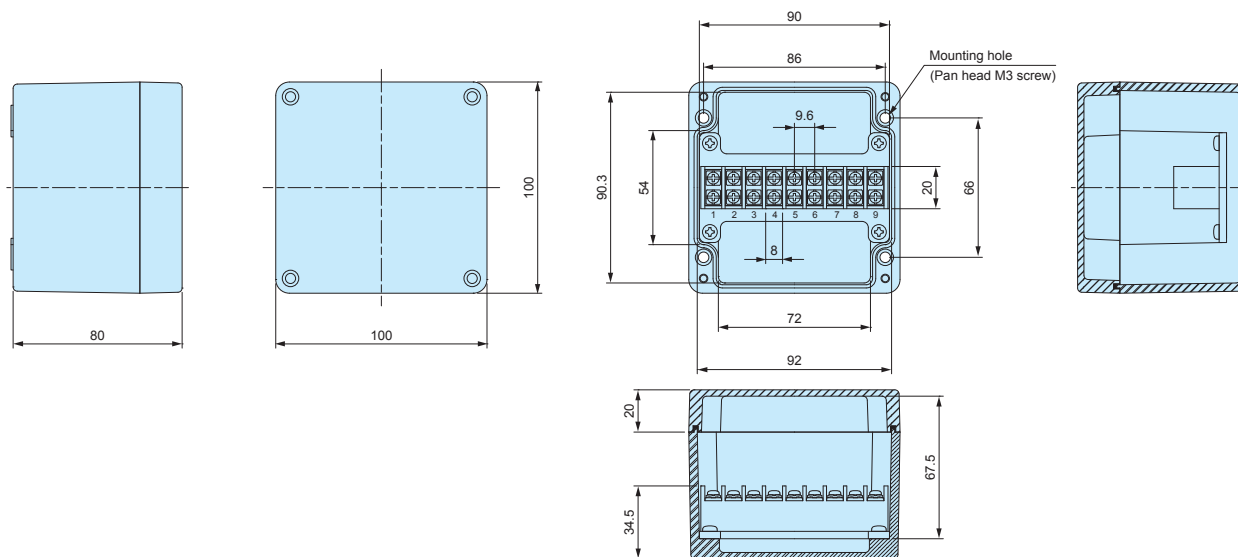
TMA dimensions

■ Drawings below are reference examples only.
DXF/DWG/PDF drawings available on our website.

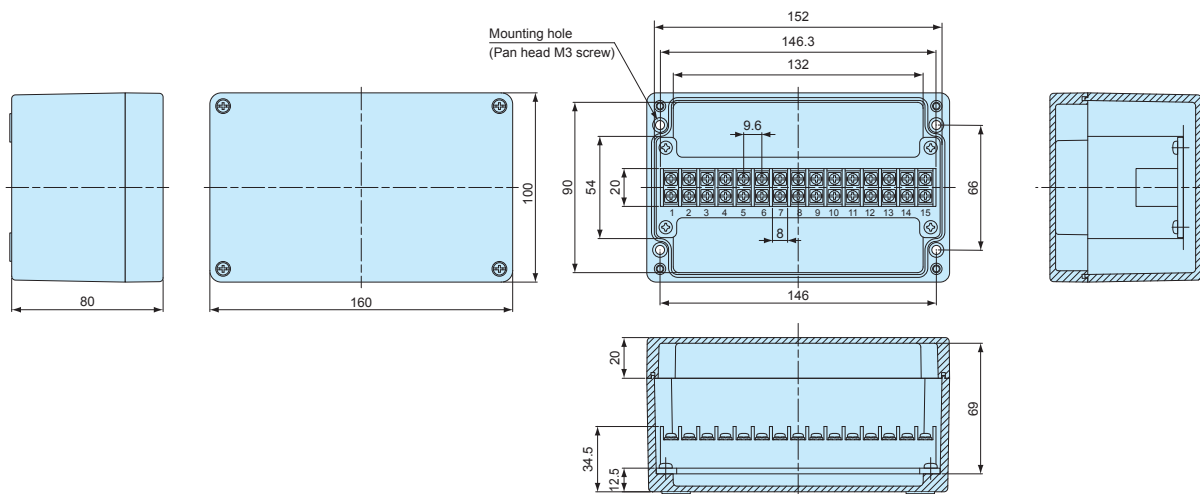
TMA-6P



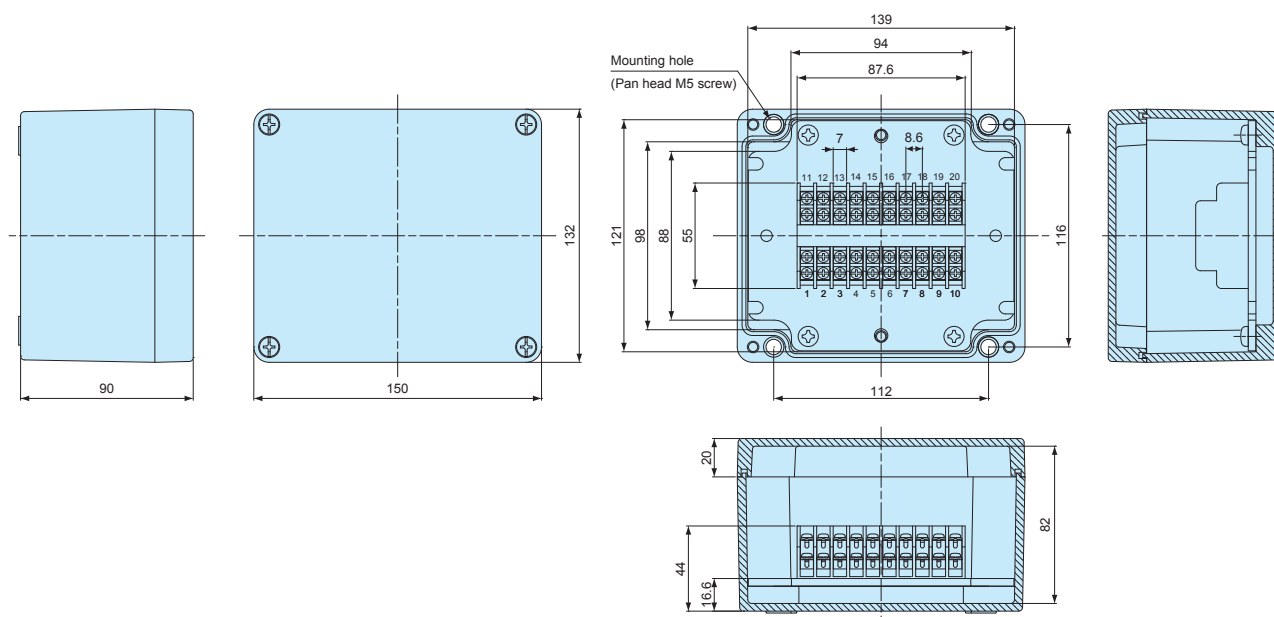
TMA-9P



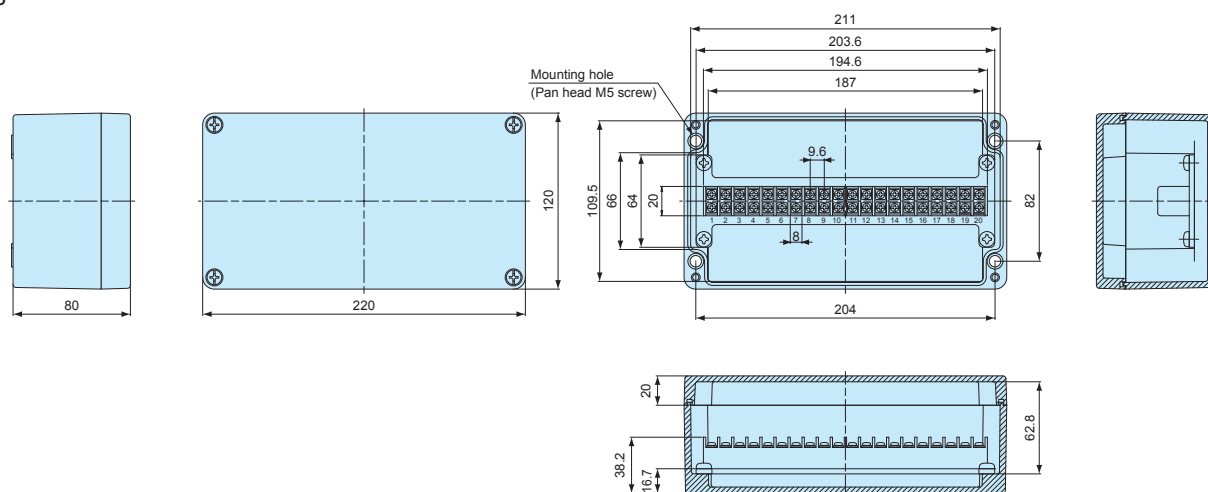
TMA-15P



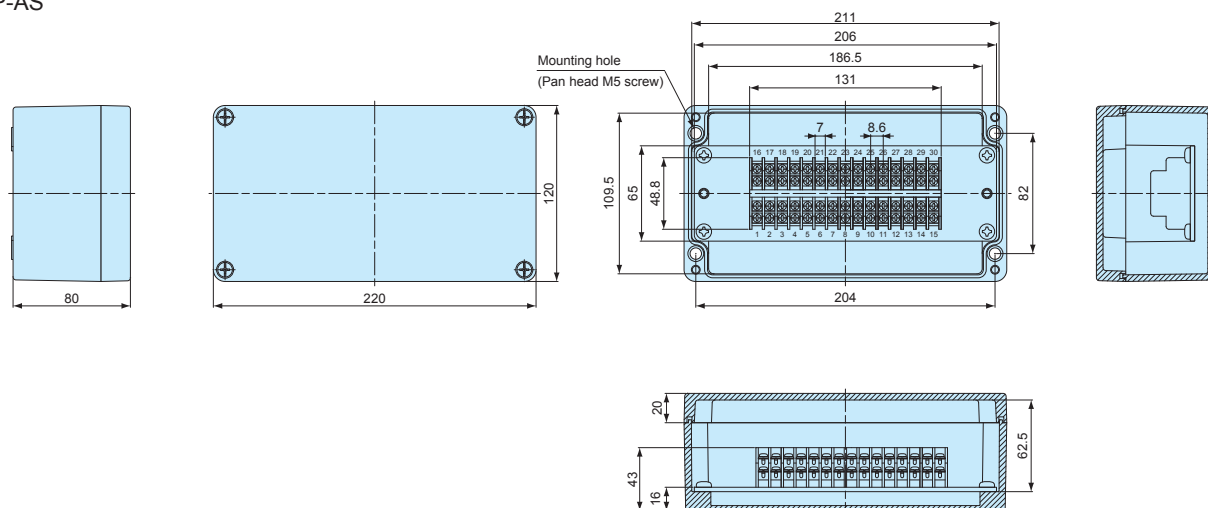
TMA-20P-AS



TMA-20P

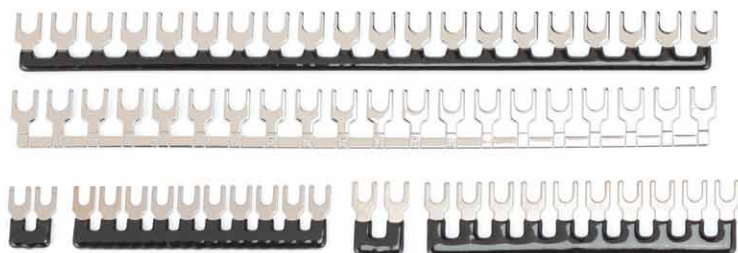


TMA-30P-AS



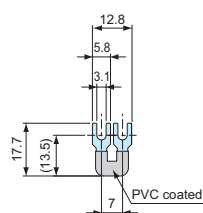
SBR SERIES

SHORTING BAR

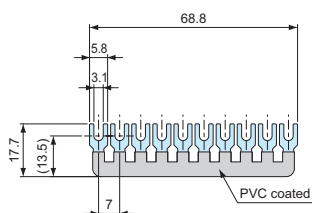


- Shorting bar for common-wiring.
- SBR70-10P, SBR85-10P, SBR95-20P, and SBR95-20N can be cut accordingly into required poles.
- PVC coated. SBR95-20 available in both PVC coated (SBR95-20P) and non PVC coated (SBR95-20N) models.
- See chart below for suitable box.

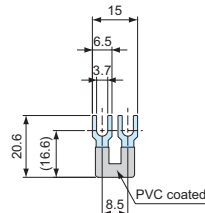
SBR70-2P



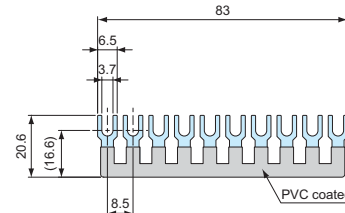
SBR70-10P



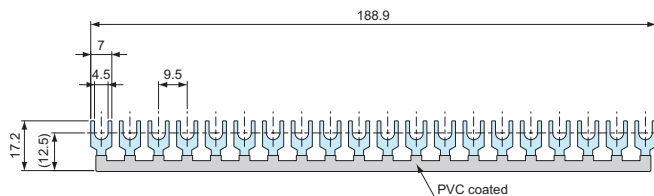
SBR85-2P



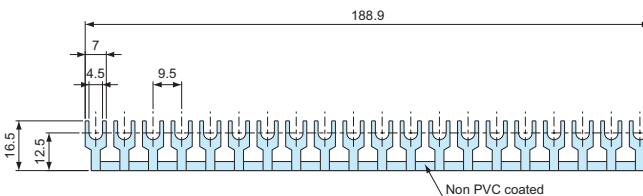
SBR85-10P



SBR95-20P



SBR95-20N



Suitable Box Chart

Product no.	Number of poles	Pole distance	Suitable box
SBR70 - 2P	2P	7.0mm	TMC series
SBR70 -10P	10P	7.0mm	TMC series
SBR85 - 2P	2P	8.6mm	TMB-20P, TMA-20P-AS, TMA30P-AS
SBR85 -10P	10P	8.6mm	TMB-20P, TMA-20P-AS, TMA30P-AS
SBR95 -20P	20P	9.6mm	TMA • TMB series (Not applicable for TMB-20P, TMA20P-AS, and TMA30P-AS models)
SBR95 -20N	20P	9.6mm	TMA • TMB series (Not applicable for TMB-20P, TMA20P-AS, and TMA30P-AS models)

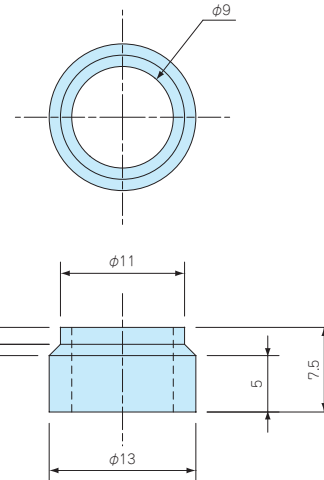
Product no. / Feature

■ Pack quantity differs by models.

Product no.	Number of poles	Material	Finish	PVC coating	Pack of
SBR70 - 2P	2P	Brass	Nickel plated	Yes	10
SBR70 -10P	10P	Brass	Nickel plated	Yes	1
SBR85 - 2P	2P	Brass	Nickel plated	Yes	10
SBR85 -10P	10P	Brass	Nickel plated	Yes	1
SBR95 -20P	20P	Brass	Nickel plated	Yes	1
SBR95 -20N	20P	Brass	Nickel plated	No	1

RB-9

RUBBER BUSH



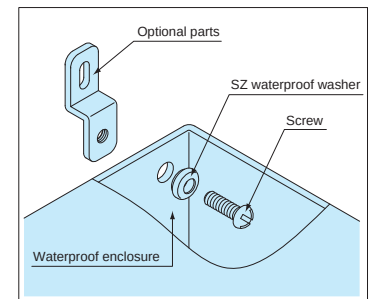
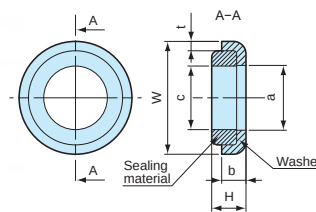
- Rubber bush for TMC series terminal junction box.
- Applicable for $\phi 8 \sim \phi 9$ mm diameter cable.

Product no. / Details

Product no.	Material	Color	Cable range	Pack of
RB-9	NBR	Black	$\phi 8 \sim \phi 9$ mm	2

SZ series

WATERPROOF WASHER



- Waterproof washer for screwing onto waterproof boxes.
- NBR sealing material has superior oil resistance (N models only).
- Silicone sealing material has wider operating temperature with superior temperature and water resistance (S models only).

Product no. / Details

- Shape of the sealing material vary by product.

Technical Data

Water pressure resistance :
M3 ~ M16
0.98MPa (10kgf/cm²) / 1 hour

Product no.	W	H	a	b	c	t	Washer material	Sealing material	Color	Screw size	Pack of
SZ- 3N	7	2.7	3.2	2.2	3.1	0.5	SUS304	NBR	Black	M 3	1
SZ- 3S	7	2.7	3.2	2.2	3.1	0.5	SUS304	Silicone	Brown	M 3	1
SZ- 4N	8	2.8	4.2	2.1	4.1	0.5	SUS304	NBR	Black	M 4	1
SZ- 4S	8	2.8	4.2	2.1	4.1	0.5	SUS304	Silicone	Brown	M 4	1
SZ- 5N	9.5	3.6	5.2	2.7	5.1	0.8	SUS304	NBR	Black	M 5	1
SZ- 5S	9.5	3.6	5.2	2.7	5.1	0.8	SUS304	Silicone	Brown	M 5	1
SZ- 6N	11.5	4	6.2	3	6.2	1	SUS304	NBR	Black	M 6	1
SZ- 6S	11.5	4	6.2	3	6.2	1	SUS304	Silicone	Brown	M 6	1
SZ- 8N	15.2	3.8	8.2	3.2	8.2	1	SUS304	NBR	Black	M 8	1
SZ- 8S	15.2	3.8	8.2	3.2	8.2	1	SUS304	Silicone	Brown	M 8	1
SZ-10N	18	5.3	10.2	4	10.2	1.5	SUS304	NBR	Black	M10	1
SZ-10S	18	5.3	10.2	4	10.2	1.5	SUS304	Silicone	Brown	M10	1
SZ-12N	24	6.1	14.2	4.8	12.2	1.5	SUS304	NBR	Black	M12	1
SZ-12S	24	6.1	14.2	4.8	12.2	1.5	SUS304	Silicone	Brown	M12	1
SZ-16N	30	6.8	18.4	5.3	16	1.9	SUS304	NBR	Black	M16	1
SZ-16S	30	6.8	18.4	5.3	16	1.9	SUS304	Silicone	Brown	M16	1
NEW SZ-3N-P	7	2.7	3.2	2.2	3.1	0.5	SUS304	NBR	Black	M 3	50
NEW SZ-3S-P	7	2.7	3.2	2.2	3.1	0.5	SUS304	Silicone	Brown	M 3	50
NEW SZ-4N-P	8	2.8	4.2	2.1	4.1	0.5	SUS304	NBR	Black	M 4	50
NEW SZ-4S-P	8	2.8	4.2	2.1	4.1	0.5	SUS304	Silicone	Brown	M 4	50
NEW SZ-5N-P	9.5	3.6	5.2	2.7	5.1	0.8	SUS304	NBR	Black	M 5	50
NEW SZ-5S-P	9.5	3.6	5.2	2.7	5.1	0.8	SUS304	Silicone	Brown	M 5	50



- Weatherproof cable gland equipped with high ultraviolet and degradation resistant silicone sealing insert and O-ring.
- Recommended to use outdoors where waterproofing is critical.
- IP67 protection class.

Components

■ PA = Polyamide

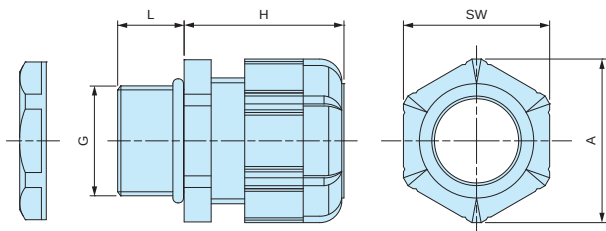
No.	Part name	Material
1	Cap	PA66 UL94V-2
2	Sealing insert	Silicone
3	Connector	PA66 UL94V-2
4	O-ring	Silicone
5	Lock nut	PA66 UL94V-2

RMW dimensions

■ DXF/DWG/PDF drawings available on our website.

Technical Data

Protection class: IP67
Operating temperature: -20°C ~ +80°C



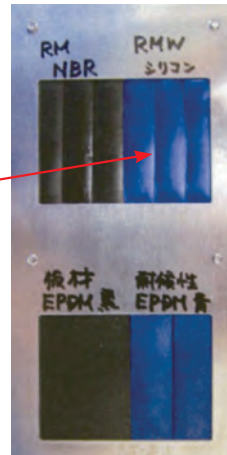
- Lock nut is not included for RMW10S-6.
- Please drill a proper thread hole into the enclosure for installation.

Product no. / Dimensions

Product no.		G		Cable range		L	H Max	SW	A	Pack of
● Black	● Light gray	Thread size	Mounting hole	Min	Max					
RMW8L-2.5B	RMW8L-2.5S	M8×1.25	Φ8.2	1	2.5	13	19.5	11.8	13.5	1
RMW8L-4B	RMW8L-4S	M8×1.25	Φ8.2	2.5	4	13	19.5	11.8	13.5	1
RMW10S-6B	RMW10S-6S	M10×1.5	—	3	6	8	20.5	13	14.4	1
RMW10L-6B	RMW10L-6S	M10×1.5	Φ10.2	3	6	13	20.5	13	14.4	1
RMW12S-7B	RMW12S-7S	M12×1.5	Φ12.2	3.5	7	9	20.5	16	17.6	1
RMW12L-7B	RMW12L-7S	M12×1.5	Φ12.2	3.5	7	14.5	20.5	16	17.7	1
RMW16S-8B	RMW16S-8S	M16×1.5	Φ16.2	4	8	9	23.5	19	21	1
RMW16L-8B	RMW16L-8S	M16×1.5	Φ16.2	4	8	15	24	19	21	1
RMW20S-12B	RMW20S-12S	M20×1.5	Φ20.2	6	12	10	29	24	26.2	1
RMW20L-12B	RMW20L-12S	M20×1.5	Φ20.2	6	12	15	28.5	24	26.2	1
RMW25L-17B	RMW25L-17S	M25×1.5	Φ25.2	11	17	15	35	33	36.2	1
RMW32L-21B	RMW32L-21S	M32×1.5	Φ32.3	13	21	15	38	36	39.5	1
RMW40L-27B	RMW40L-27S	M40×1.5	Φ40.3	18	27	18	43.5	45.7	50.5	1
RMW50L-38B	RMW50L-38S	M50×1.5	Φ50.4	27	38	20	50.5	60	66.5	1
RMW10L-6B-P	RMW10L-6S-P	M10×1.5	Φ10.2	3	6	13	20.5	13	14.4	100
RMW12S-7B-P	RMW12S-7S-P	M12×1.5	Φ12.2	3.5	7	9	20.5	16	17.6	100
RMW12L-7B-P	RMW12L-7S-P	M12×1.5	Φ12.2	3.5	7	14.5	20.5	16	17.7	100
RMW16S-8B-P	RMW16S-8S-P	M16×1.5	Φ16.2	4	8	9	23.5	19	21	100
RMW16L-8B-P	RMW16L-8S-P	M16×1.5	Φ16.2	4	8	15	24	19	21	100
RMW20S-12B-P	RMW20S-12S-P	M20×1.5	Φ20.2	6	12	10	29	24	26.2	100
RMW20L-12B-P	RMW20L-12S-P	M20×1.5	Φ20.2	6	12	15	28.5	24	26.2	100

RMW series silicone sealing insert weatherproof test report

Object: Cut into a piece of the silicone sealing insert from RMW series and attach it onto an aluminium plate.
For comparison, NBR sealing insert from our RM and EPDM sealing insert from another manufacturer is also attached for comparison purposes.



Before



After

Testing conditions

Equipment :

7.5kW Super Xenon Weather Meter SX75 (Suga Test Instruments Co., Ltd.- <http://www.sugatest.co.jp/english/>)

Conditions :

JIS B7754 : 1991

Testing with an authorized Xenon arc lamp weathering test equipment under the conditions denoted below.

Irradiance : 180W/m^2 at 300-400nm

Black Panel Temperature : $63\pm 3^\circ\text{C}$ Humidity Range : $50\pm 10\%$

Cycle Conditions : 120 minutes cycle (18 minutes irradiation + water spray - 102 minutes irradiation)

2,000 hours (equivalent to a period of 4 years under natural conditions)

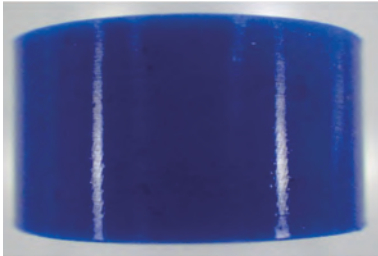
Time period :

Total radiant exposure : 1296MJ/m^2

Test result (visual / touch inspection)

Silicone sealing insert material : No cracks, no gloss transition, no powder - no appearance change at all. Flexibility remains unchanged.

Before



After



NBR material from our RM series : Lost glossiness on the surface and material is stiffened.

Before

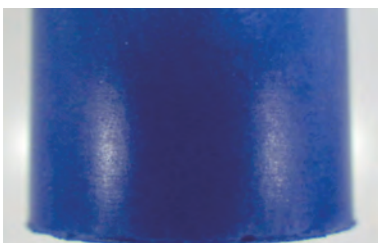


After

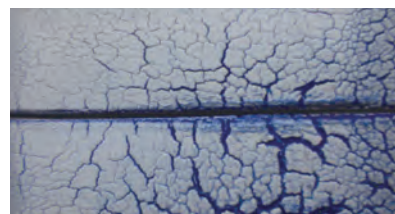


EPDM material from weatherproof cable gland of another manufacturer : Cracked, color drastically faded and powder appeared on the surface.

Before



After





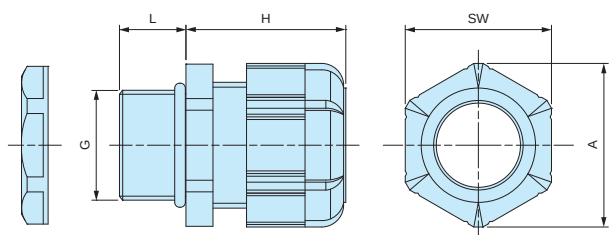
- Low cost cable glands made from polyamide material.
- Wide selection, for M8 ~ M63, suitable for $\Phi 1\text{mm} \sim \Phi 44\text{ mm}$ cable.
- High oil resistant NBR rubber sealing and O-ring.
- IP67 protection class.

Components

■ PA = Polyamide

No.	Part name	Material
1	Cap	PA66 UL94V-2
2	Sealing insert	NBR
3	Connector	PA66 UL94V-2
4	O-ring	NBR
5	Lock nut	PA66 UL94V-2

RM dimensions ■ DXF/DWG/PDF drawings available on our website.



Technical Data

Protection class: IP67
Operating temperature: $-20^{\circ}\text{C} \sim +80^{\circ}\text{C}$

- Lock nut is not included for RM8S-2.5, 8S-4, and 10S-6 models.
Please drill a proper thread hole into the enclosure for installation.

Product no. / Dimensions

Product no.		G		Cable range		L	H Max	SW	A	Pack of
● Black	● Light gray	Thread size	Mounting hole	Min	Max					
RM8S-2.5B	RM8S-2.5S	M8×1.25	—	1	2.5	7.5	19.5	11.8	13.5	1
RM8L-2.5B	RM8L-2.5S	M8×1.25	$\Phi 8.2$	1	2.5	13	19.5	11.8	13.5	1
RM8S-4B	RM8S-4S	M8×1.25	—	2.5	4	7.5	19.5	11.8	13.5	1
RM8L-4B	RM8L-4S	M8×1.25	$\Phi 8.2$	2.5	4	13	19.5	11.8	13.5	1
RM10S-6B	RM10S-6S	M10×1.5	—	3	6	8	20.5	13	14.4	1
RM10L-6B	RM10L-6S	M10×1.5	$\Phi 10.2$	3	6	13	20.5	13	14.4	1
RM12S-7B	RM12S-7S	M12×1.5	$\Phi 12.2$	3.5	7	9	20.5	16	17.6	1
RM12L-7B	RM12L-7S	M12×1.5	$\Phi 12.2$	3.5	7	14.5	20.5	16	17.7	1
RM16S-8B	RM16S-8S	M16×1.5	$\Phi 16.2$	4	8	9	23.5	19	21	1
RM16L-8B	RM16L-8S	M16×1.5	$\Phi 16.2$	4	8	15	24	19	21	1
RM20S-12B	RM20S-12S	M20×1.5	$\Phi 20.2$	6	12	10	29	24	26.2	1
RM20L-12B	RM20L-12S	M20×1.5	$\Phi 20.2$	6	12	15	28.5	24	26.2	1
RM25L-17B	RM25L-17S	M25×1.5	$\Phi 25.2$	11	17	15	35	33	36.2	1
RM32L-21B	RM32L-21S	M32×1.5	$\Phi 32.3$	13	21	15	38	36	39.5	1
RM40L-27B	RM40L-27S	M40×1.5	$\Phi 40.3$	18	27	18	43.5	45.7	50.5	1
RM50L-38B	RM50L-38S	M50×1.5	$\Phi 50.4$	27	38	20	50.5	60	66.5	1
RM63L-44B	RM63L-44S	M63×1.5	$\Phi 63.4$	37	44	20	53	68	75.5	1
RM10L-6B-P	RM10L-6S-P	M10×1.5	$\Phi 10.2$	3	6	13	20.5	13	14.4	100
RM12S-7B-P	RM12S-7S-P	M12×1.5	$\Phi 12.2$	3.5	7	9	20.5	16	17.6	100
RM12L-7B-P	RM12L-7S-P	M12×1.5	$\Phi 12.2$	3.5	7	14.5	20.5	16	17.7	100
RM16S-8B-P	RM16S-8S-P	M16×1.5	$\Phi 16.2$	4	8	9	23.5	19	21	100
RM16L-8B-P	RM16L-8S-P	M16×1.5	$\Phi 16.2$	4	8	15	24	19	21	100
RM20S-12B-P	RM20S-12S-P	M20×1.5	$\Phi 20.2$	6	12	10	29	24	26.2	100
RM20L-12B-P	RM20L-12S-P	M20×1.5	$\Phi 20.2$	6	12	15	28.5	24	26.2	100
RM25L-17B-P	RM25L-17S-P	M25×1.5	$\Phi 25.2$	11	17	15	35	33	36.2	100

RSP series

STRAIN RELIEF CABLE GLAND



IP67

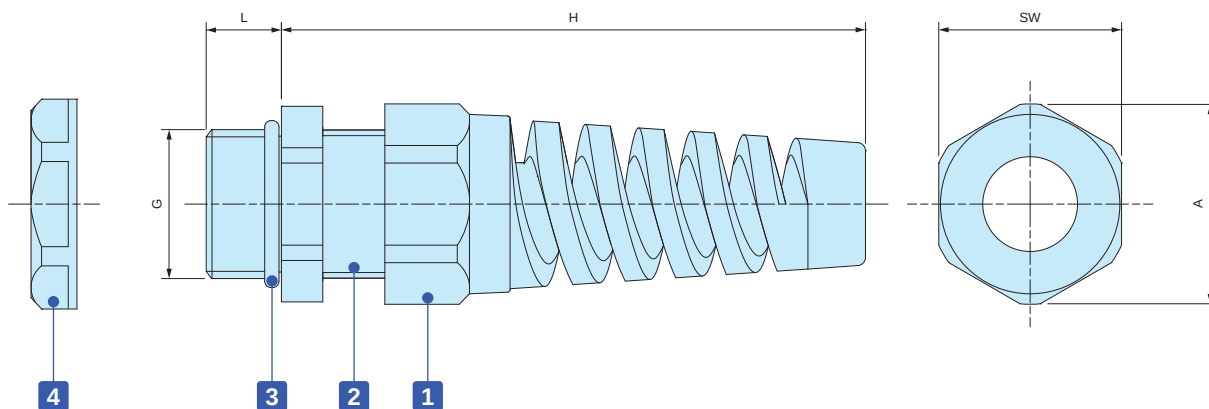
- Strain relief cap protects cables by preventing it from bending beyond its limit and breaking.

Technical Data

Protection class : IP67
Operating temperature : -20°C ~ +80°C

RSP dimensions

- DXF/DWG/PDF drawings available on our website.

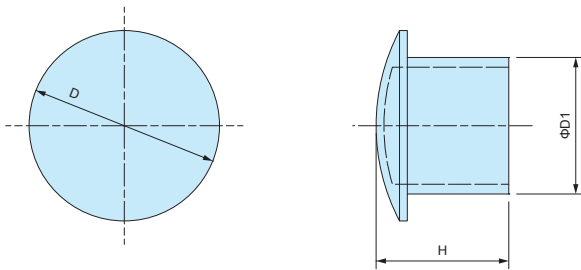


Components

No.	Part name	Material
1	Stain relief cap	PA66 UL94V-2
-	Sealing insert	NBR
2	Connector	PA66 UL94V-2
3	O-ring	NBR
4	Lock nut	PA66 UL94V-2

Product no. / Dimensions

Product no.		G		Cable range		L	H Max	SW	A	Pack of
● Black	● Light gray	Thread size	Mounting hole	Min	Max					
RSP12-6B	RSP12-6S	M12×1.5	Φ12.2	3.5	6	9	62	16	17	1
RSP16-8B	RSP16-8S	M16×1.5	Φ16.2	4	8	9	69	19.5	21	1
RSP20-11B	RSP20-11S	M20×1.5	Φ20.2	6	11	10	82	24	26	1
RSP25-16B	RSP25-16S	M25×1.5	Φ25.2	11	16	12	102	33	36	1

SP SERIES**SEALING PLUG****SP dimensions**

■ Material : Nylon

- Sealing plug for cable glands when not in use.
- Maintain a waterproof seal when plugged into the sealing insert on cable glands.

Product no. / Dimensions

Product no.	D	D1	H	Suitable cable glands	Pack of
SP-12	10.2	6	15.5	RMW12, RM12, RMW16, RM16, RPG7, RPG9	10
SP-16	15.6	9.5	15.5	RMW20, RM20, RPG11, RPG13.5	10
SP-20	19.6	13.5	16.5	RPG16	10
SP-25	24.4	17.5	17	RMW25, RM25, RMW32, RM32, RPG21	5
SP-40	32.5	24.5	17.5	RMW40, RM40, RPG29	5
SP-50	47.2	38.9	17.6	RMW50, RM50	5



- High water protection IP68 (1bar / 30min) polyamide cable gland.
- Wide selection, for M8 ~ M50, suitable for $\Phi 2.5\text{mm}$ ~ $\Phi 42\text{ mm}$ cable.
- Super tough and superior heat resistant PA6GF (glass fiber filled PA6) material on cap and connector.
- Safer halogen free, eco-friendly product.

Technical Data

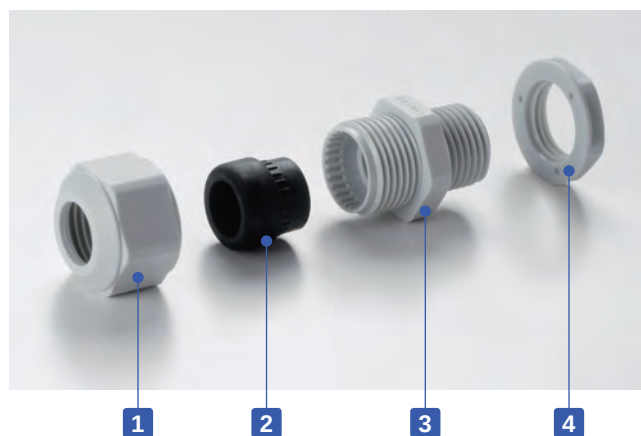
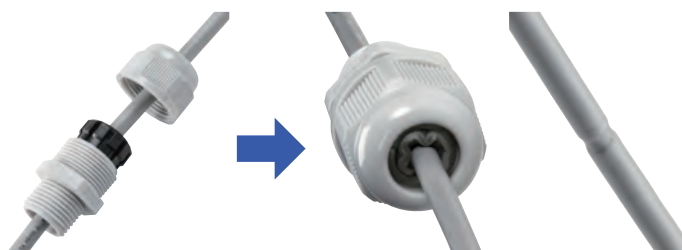
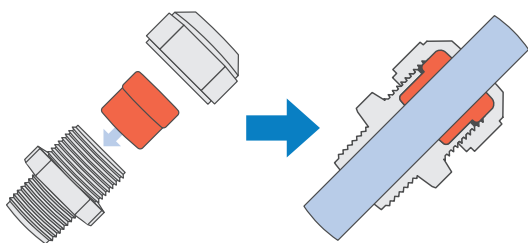
Protection class: IP68 1bar / 30min
 Operating temperature: -20°C ~ +100°C
 Compliant with EN50262 Ver. A

AG series

Thicker sealing insert evenly hold a cable by having a larger holding area. Remains durable even after repeated tightening / loosening.

Lamellar insert type

If over-tightened, it can cause the rubber bush or cable to deform, which can allow water to seep in.



Components

■ PA6GF = Polyamide6 Glass Fiber Filled

No.	Part name	Material
1	Cap	PA6GF
2	Sealing insert	TPE
3	Connector	PA6GF
4	Lock nut	PA6

■ Lock nut is not included for M8 and M10 sizes.

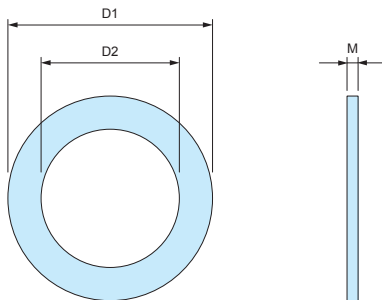
Please drill a proper thread hole into the enclosure for installation.

- Proper tightening torque varies by each cable diameter. Tighten the cap until top of the sealing insert forms a small bead between the cap and the cable.



AGP SERIES**SEALING WASHER for AG • AGSP**

- Sealing washer for AG series.
- Made from oil resistant NBR material.
- Use in the case of installation on a rough or uneven surfaces.
- Selectable in 7 sizes (from M12 to M50)
- Sealing washer is not necessary for installation on flat surfaces.

AGP Dimensions

- Material : NBR

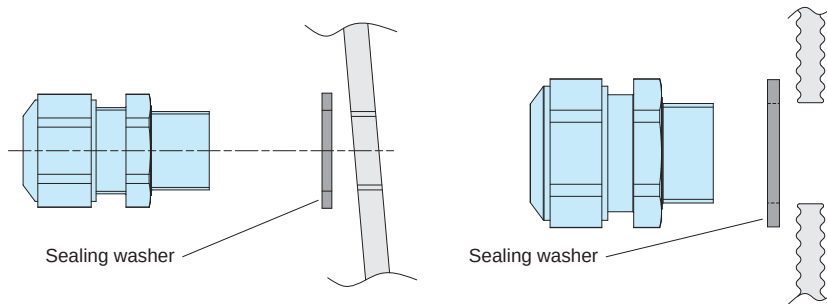
**Product no. / Dimensions**

Product no.	D1	D2	M	Suitable cable gland	Pack of
AGP-12	20	12	1.6	AG12	10
AGP-16	23.5	16.5	2.0	AG16	10
AGP-20	29	20	2.0	AG20	10
AGP-25	37	25	2.0	AG25	10
AGP-32	44	32	2.2	AG32	5
AGP-40	52	40	2.2	AG40	5
AGP-50	64	50	3.1	AG50	5

■ No optional sealing washer is required when installing on an even surface because of the built-in waterproof rib.

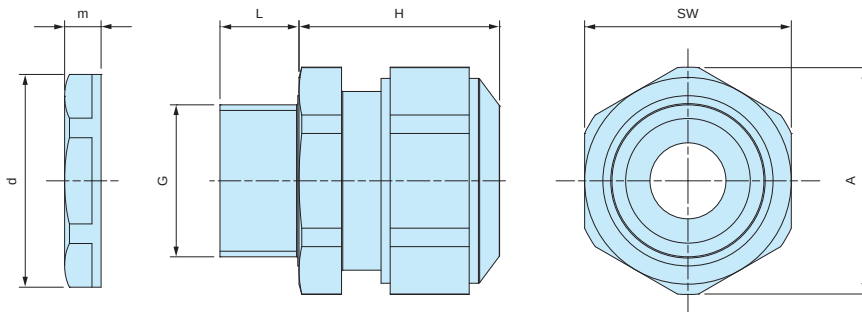
■ An optional sealing washer is required when installing on an uneven surface. (See website for more information on the optional sealing washer)

Waterproof rib



AG dimensions

■ DXF/DWG/PDF drawings available on our website.



■ Lock nut is not included for M8 and M10 sizes.
Please drill a proper thread hole into the enclosure for installation.

Product no. / Dimensions

Product no.		G		Cable range		L	H Max	SW	A	d	m	Pack of
● Black	● Light gray	Thread size	Mounting hole	Min	Max							
AG8-3.5B	AG8-3.5S	M8×1.0	—	2.5	3.5	10	17	12	13.2	—	—	1
AG8-5B	AG8-5S	M8×1.0	—	3.5	4.7	10	17	12	13.2	—	—	1
AG10-6B	AG10-6S	M10×1.0	—	4	6	10	19	15	16.5	—	—	1
AG12-5B	AG12-5S	M12×1.5	Φ12.2	3.5	4.7	12	23.5	17	18.7	18.8	5	1
AG12-6.5B	AG12-6.5S	M12×1.5	Φ12.2	5	6.5	12	23	17	18.7	18.8	5	1
AG12-8B	AG12-8S	M12×1.5	Φ12.2	6.5	7.8	12	23	17	18.7	18.8	5	1
AG16-10B	AG16-10S	M16×1.5	Φ16.2	8	10	12	26	21	23.1	24.3	5	1
AG20-15B	AG20-15S	M20×1.5	Φ20.2	11	15	13	27	27	29.7	29	6	1
AG25-16B	AG25-16S	M25×1.5	Φ25.2	12.5	16	13	34	34	37.4	36	6.7	1
AG25-20B	AG25-20S	M25×1.5	Φ25.2	16	20	13	34	34	37.4	36	6.7	1
AG32-25.5B	AG32-25.5S	M32×1.5	Φ32.3	21	25.5	15	36	41	45.6	46	8	1
AG40-28.5B	AG40-28.5S	M40×1.5	Φ40.3	24	28.5	15	41	50	55.4	53.5	9	1
AG40-33B	AG40-33S	M40×1.5	Φ40.3	28.5	33	15	41	50	55.4	53.5	9	1
AG50-37B	AG50-37S	M50×1.5	Φ50.4	33	37	16	45	60	65.5	66	9.6	1
AG50-42B	AG50-42S	M50×1.5	Φ50.4	37	42	16	45	60	65.5	66	9.6	1



- High water protection IP68 (1bar / 30min) metal cable gland.
- Wide selection, for M6 ~ M50 and PG7 ~ PG16.
Suitable for $\Phi 2$ mm ~ $\Phi 42$ mm cable.

Technical Data

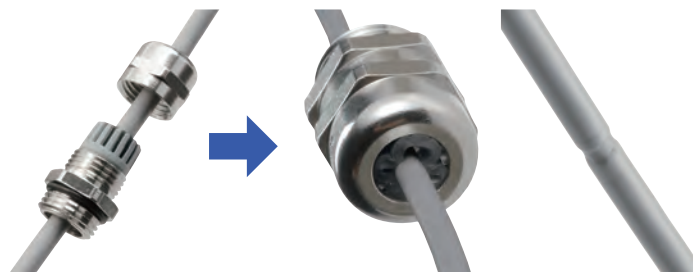
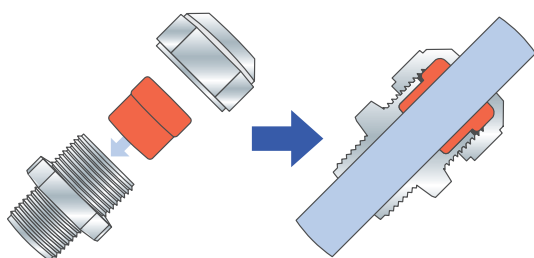
Protection class: IP68 1bar / 30min
 Operating temperature: -40°C ~ +100°C
 Compliant with EN50262 Ver. A

AGM series

Thicker sealing insert evenly hold a cable by having a larger holding area.
 Remains durable even after repeated tightening / loosening.

Lamellar insert type

If over-tightened, it can cause the rubber bush or cable to deform, which can allow water to seep in.



- Proper tightening torque varies by each cable diameter.
Tighten the cap until top of the sealing insert forms a small bead between the cap and the cable.

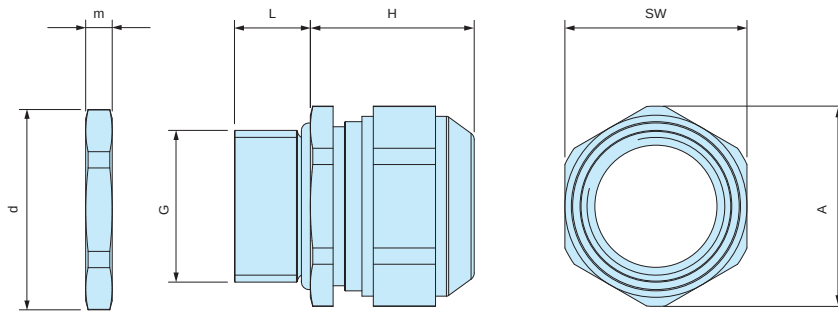


Components

No.	Part name	Material	Color / Finish
1	Cap	Brass	Nickel plated
2	Sealing insert	TPE	Black
3	Connector	Brass	Nickel plated
-	O-ring	NBR	Black
4	Lock nut	Brass	Nickel plated

AGM dimensions

■ DXF/DWG/PDF drawings available on our website.



Product no. / Dimensions

Product no.	G			Cable range		L	H Max	SW	A	d	m	Pack of
	Thread size	Thread outer dia.	Mounting hole	Min	Max							
AGM6-2.5	M6×1.0	—	Φ6.2	2	2.5	8	12	8	9	10	2.8	1
AGM6-3	M6×1.0	—	Φ6.2	2.5	3.0	8	12	8	9	10	2.8	1
AGM6-3.5	M6×1.0	—	Φ6.2	3.0	3.5	8	12	8	9	10	2.8	1
AGM8-5	M8×1.25	—	Φ8.2	3.5	4.7	10	14	11	12	12	3	1
AGM10-6	M10×1.5	—	Φ10.2	4.0	6.0	10	15	13	14.3	14	2.8	1
AGM12-8	M12×1.5	—	Φ12.2	6.5	8.0	10	17	15	16.5	16.5	2.8	1
AGM16-10.5	M16×1.5	—	Φ16.2	8.0	10.5	10	21	18	20	21	3	1
AGM20-15	M20×1.5	—	Φ20.2	11.0	15.0	10	23	24	26.5	26.5	3.5	1
AGM25-20	M25×1.5	—	Φ25.2	16.0	20.0	11	28	30	33	33	4	1
AGM32-25.5	M32×1.5	—	Φ32.3	21.0	25.5	13	29.5	36	39.5	39.5	4	1
AGM40-28.5	M40×1.5	—	Φ40.3	24.0	28.5	13	32	46	50.7	51	5	1
AGM40-33	M40×1.5	—	Φ40.3	28.5	33.0	13	32	46	50.7	51	5	1
AGM50-37	M50×1.5	—	Φ50.4	33.0	37.0	14	34	55	59.7	60	5.5	1
AGM50-42	M50×1.5	—	Φ50.4	37.0	42.0	14	34	55	59.7	60	5.5	1

AGE SERIES

EMC SHIELDED CABLE GLAND



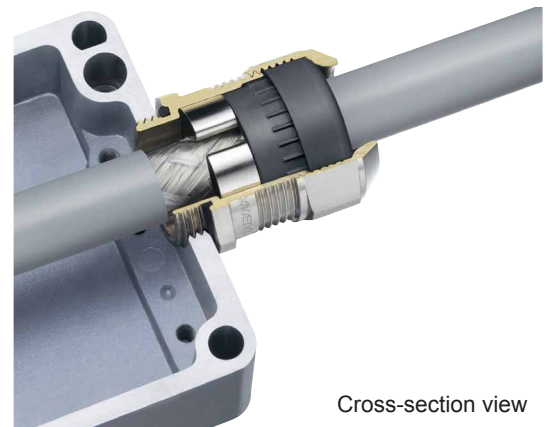
- Optimal contact spring provides excellent shield contact and the smallest possible transfer impedance.
- Clawed lock nut makes a good EMC shield contact possible on conductive enclosures.
- Shape of the contact spring not only allows for a large clamping range to the shield but also enables easy and faster installation and re-installation.
- 2-piece detachable sealing inserts can be adapted to the wider existing cable diameter on site.
(AGE12 available only with 1-piece sealing insert)

Technical Data

Protection class : IP68 2bar / 30min, IP69K
20m depth immersion in 30 minutes
Operating temperature : -60°C ~ +100°C
Compliant with IEC62444 Var. A

Cable Range

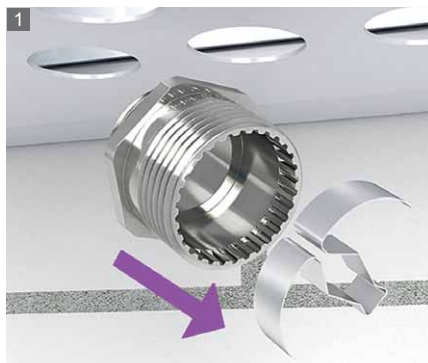
No.	Sealing insert type	
	Assembled	Detached
AGE16-10.5	Φ 6 ~ Φ 7.5	Φ 7.5 ~ Φ10.5
AGE20-15	Φ 8 ~ Φ10.5	Φ10.5 ~ Φ15
AGE25-20	Φ12.5 ~ Φ15	Φ15 ~ Φ20
AGE32-25	Φ17 ~ Φ20	Φ20 ~ Φ25



Components

No.	Part name	Material	Color / Finish
1	Cap	Brass	Nickel plated
2	Sealing insert	TPE	Black
3	Connector	Brass	Nickel plated
4	Contact spring	Stainless steel	Unfinished
-	O-Ring	NBR	Black
5	Lock-nut	Brass	Nickel plated

INSTALLATION Instruction



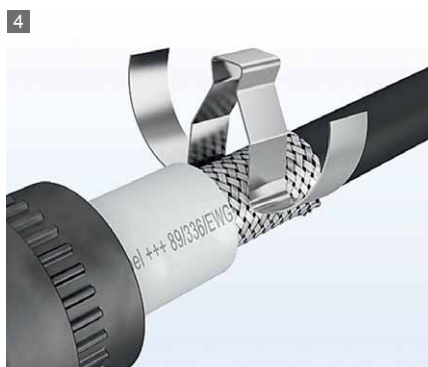
Remove the contact spring from the connector.



Install the connector onto the enclosure.



Strip the cable.



Clip the contact spring on the shielded cable.



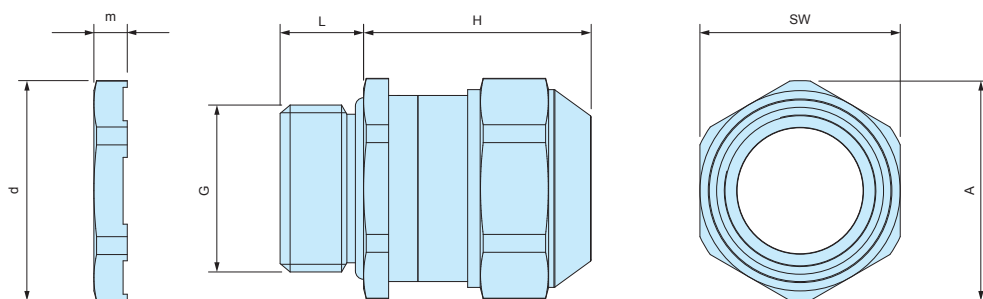
Pass the cable through the Sealing insert and cap.



Tighten the cap to complete.

AGE dimensions

■ DXF/DWG/PDF drawings available on our website.



Product no. / Dimensions

Product no.	G		Cable range		L	H Max	SW	A	d	m	Pack of
	Thread size	Mounting hole	Min	Max							
AGE12-5	M12×1.5	Φ12.2	3.5	5.0	10	22	15	16.5	16.5	3.5	1
AGE12-6.5	M12×1.5	Φ12.2	5.0	6.5	10	22	15	16.5	16.5	3.5	1
AGE16-10.5	M16×1.5	Φ16.2	6.0	10.5	10	25	18	20	21	3.5	1
AGE20-15	M20×1.5	Φ20.2	8.0	15.0	10	27	24	26.5	26.5	4	1
AGE25-20	M25×1.5	Φ25.2	12.5	20.0	11	33	30	33	33	4	1
AGE32-25	M32×1.5	Φ32.3	17.0	25.0	13	34	36	39.5	39.5	5	1

AGH SERIES

HEAT RESISTANT METAL CABLE GLAND



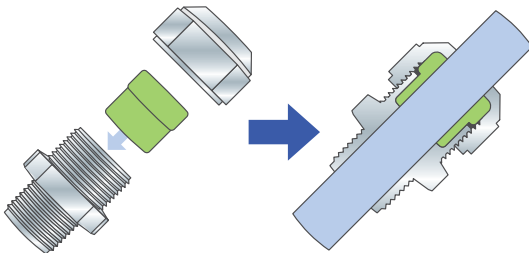
- Heat resistant sealing insert made of FPM material. Resistant up to 200°C
- IP68 1bar / 30min high performance waterproof cable gland.

Technical Data

Protection class : Protection class IP68 1bar / 30min
 10m depth immersion in 30 minutes
 Operating temperature : -40°C ~ +200°C
 Compliant with EN50262 Var. A

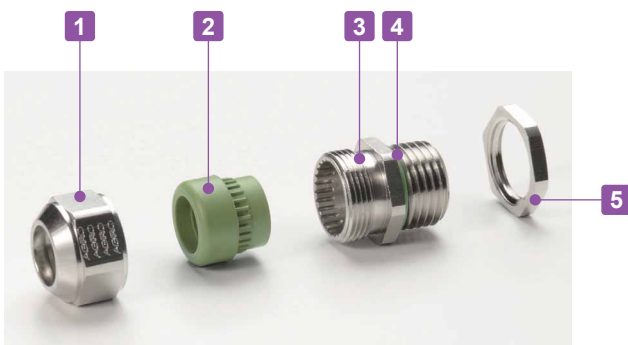
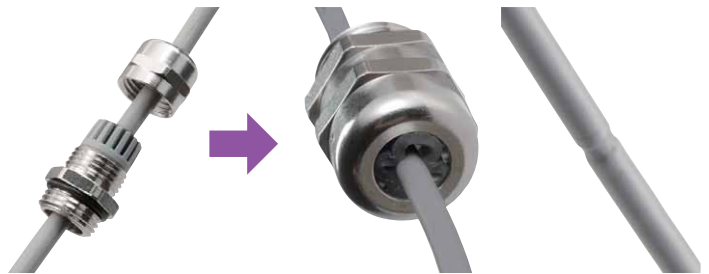
AGH series

Thicker sealing insert evenly clasp onto the cable by having a larger area.
 Remains durable even after repeated tightening / loosening.



Conventional cable gland

If over-tightened, it can cause the rubber bush or cable to deform,
 which may allow water to seep in.



- Tightening torque varies depending on the cable diameter.
 Tighten until the sealing insert protrudes slightly from the cap.

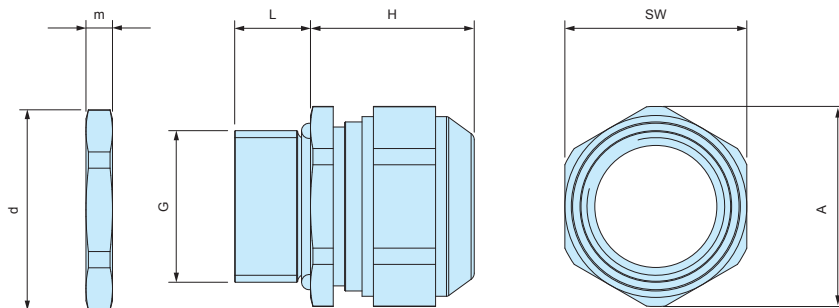


Components

No.	Part name	Material	Color / Finish
1	Cap	Brass	Nickel plated
2	Sealing insert	FPM	Green
3	Connector	Brass	Nickel plated
4	O-Ring	FPM	Green
5	Lock-nut	Brass	Nickel plated

AGH dimensions

■ DXF/DWG/PDF drawings available on our website.



Product no. / Dimensions

Product no.	G		Cable range		L	H Max	SW	A	d	m	Pack of
	Thread size	Mounting hole	Min	Max							
AGH10-6	M10×1.5	Φ10.2	4.0	6.0	10	15	13	14.3	14.2	3	1
AGH12-8	M12×1.5	Φ12.2	6.5	8.0	10	17	15	16.5	16.5	3	1
AGH16-10.5	M16×1.5	Φ16.2	8.0	10.5	10	20	18	20	21	3	1
AGH20-15	M20×1.5	Φ20.2	11.0	15.0	10	23	24	26.5	26.3	3.5	1
AGH25-20	M25×1.5	Φ25.2	16.0	20.0	11	27	30	33	33	4	1
AGH32-25.5	M32×1.5	Φ32.3	21.0	25.5	13	28.5	36	39.7	39.7	4	1

PMF-6B

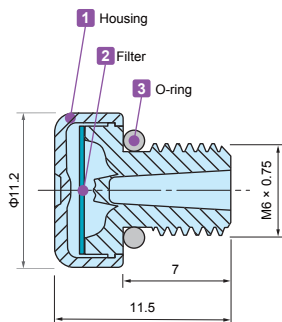
SMALL PROTECTIVE VENT



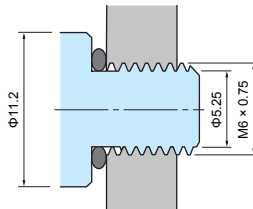
Application example

- Small and screw-in protective vent suitable for compact, and hand-held type devices.
- IP68 protection class (water depth 2 meters / 60 mins) and -40°C ~ +150°C operating temperature range allows it to be used in various environments.
- Suitable for enclosures with capacities of 2.0 litres or under.
- For outdoor use, installation on the side of the enclosure unit is recommended.

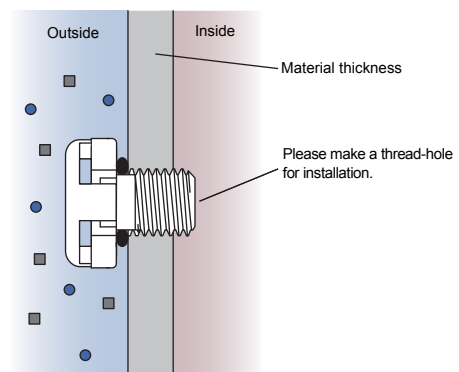
PMF-6B dimensions



Hole milling drawings



Installation drawings



Technical Data

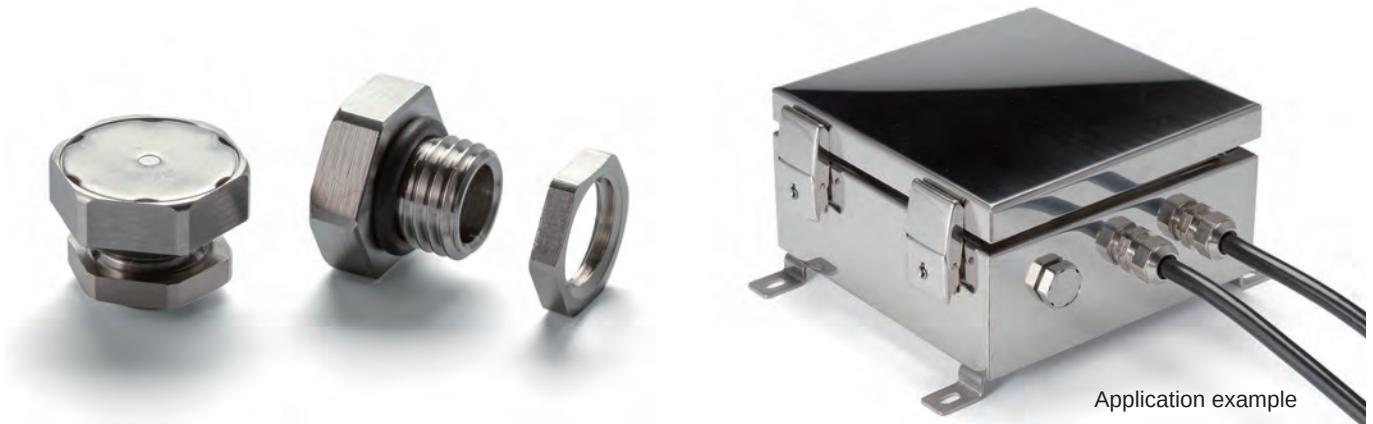
Airflow	300ml / min (dp = 7 kPa)
Recommended Torque	0.2 ~ 0.4 N · m
Certifications	IEC60529 (Protection class test) : IP66 • IP67 • IP68 IEC60068-2-1, 2, 14 (Heat resistance test) : -40°C ~ +150°C IEC60068-2-78 (Humidity test) : 85°C • 85% humidity • 1000 hours IEC60068-2-64 (Vibration test) UL94V-0 (Flame-resistant) • UL746C f1

Product no. / Dimensions

Product no.	Material			G	
● Black	1 Housing	2 Filter	3 O-ring	Thread size	Mount hole
PMF-6B	PA6 (Body) • PA66 (Cap)	PTFE	Silicone	M6 x 0.75	—

PMF-12M

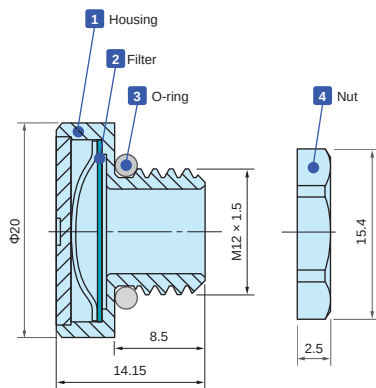
STAINLESS STEEL PROTECTIVE VENT



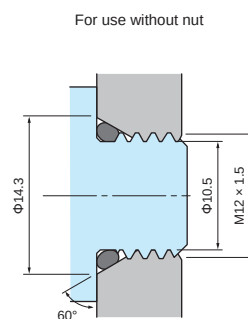
Application example

- Stainless steel protective vent for superior durability and chemical resistance.
- IP68 protection class (water depth 2 meters / 60 mins) and -40°C ~ +125°C operating temperature range allows it to be used in various environments.
- Suitable for enclosures with capacities of 20 litres or under.
- For outdoor use, installation on the side of the enclosure unit is recommended.

PMF-12M dimensions

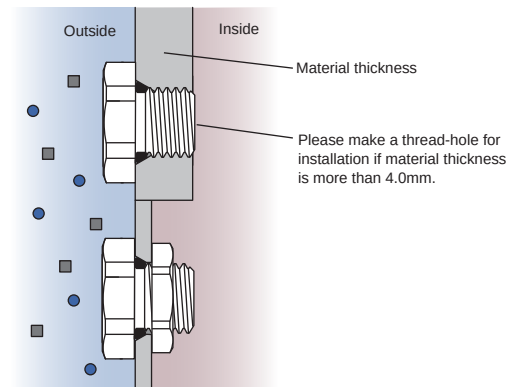


Hole milling drawings



- While $\Phi 12.2\text{mm}$ through-hole is sufficient for installation, 60° angle tapered hole is recommended to prevent deformation of the O-ring.

Installation drawings



- If used with a lock nut, material thickness should not exceed 4.0mm.

Technical Data

Airflow	1600ml / min (dp = 7 kPa)
Recommended Torque	0.6 ~ 1.2 N • m
Certifications	IEC60529 (Protection class test) : IP66 • IP67 • IP68 • IP69K IEC60068-2-1, 2, 14 (Heat resistance test) : -40°C ~ +125°C IEC60068-2-78 (Humidity test) : 85°C • 85% humidity • 1000 hours IEC60068-2-64 (Vibration test)

Product no. / Details

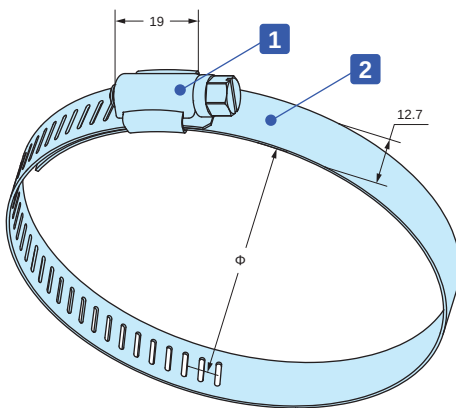
Product no.	Material				G		Nut SW
	1 Housing	2 Filter	3 O-ring	4 Nut	Thread size	Mount hole	
PMF-12M	Stainless steel	PTFE	Silicone	Brass • Nickel plated	M12 x 1.5	$\Phi 12.2$	14

SNB series

STAINLESS STEEL POLE MOUNTING STRAP



SNB dimensions



- Corrosion resistant stainless steel (SUS304) belt clamp.
- It can be installed securely by tightening the screw.
- 8 mm nut driver (box driver) is recommended for tightening.
Flat-bladed screwdrivers can also be used.

Components

No.	Part name	Pcs	Material	Finish
1	Bracket	1	Stainless steel SUS304	Polished
2	Strap	1	Stainless steel SUS304	Polished

Product no. / Details

Product no.	Applicable diameter (Φ)	Strap width	Strap thickness	Recommended torque N · m	Weight (g)	Pack of
SNB 52- 76	52 ~ 76	12.7	0.6	0.7 ~ 1.0	27.5	1
SNB 72- 95	72 ~ 95	12.7	0.6	0.7 ~ 1.0	30	1
SNB 91-114	91 ~ 114	12.7	0.6	0.7 ~ 1.0	34.5	1
SNB105-127	105 ~ 127	12.7	0.6	0.7 ~ 1.0	37.5	1
SNB117-140	117 ~ 140	12.7	0.6	0.7 ~ 1.0	39.5	1
SNB130-153	130 ~ 153	12.7	0.6	0.7 ~ 1.0	41.5	1
SNB142-165	142 ~ 165	12.7	0.6	0.7 ~ 1.0	43.5	1
SNB155-178	155 ~ 178	12.7	0.6	0.7 ~ 1.0	46.5	1
SNB168-191	168 ~ 191	12.7	0.6	0.7 ~ 1.0	49	1
SNB181-204	181 ~ 204	12.7	0.6	0.7 ~ 1.0	51	1
SNB194-217	194 ~ 217	12.7	0.6	0.7 ~ 1.0	52.5	1
SNB207-230	207 ~ 230	12.7	0.6	0.7 ~ 1.0	57	1
SNB220-243	220 ~ 243	12.7	0.6	0.7 ~ 1.0	59.5	1
SNB233-256	233 ~ 256	12.7	0.6	0.7 ~ 1.0	62.5	1
SNB246-269	246 ~ 269	12.7	0.6	0.7 ~ 1.0	64	1
SNB259-282	259 ~ 282	12.7	0.6	0.7 ~ 1.0	67.5	1
SNB272-295	272 ~ 295	12.7	0.6	0.7 ~ 1.0	70	1
SNB285-308	285 ~ 308	12.7	0.6	0.7 ~ 1.0	71	1

■ Recommended torque listed is for reference only; actual may differ. Assemble after testing torque.

SNB Strap required

Suitable series	Suitable models						Required
SSK series	SSK-S1	SSK-160	SSK-170	SSK-200	SSK-210	SSK-250	2
	SSK-280	SSK-300	SSK-350	SSK-400	SSK-530		
WGMB series	WGMB-1W						1

PKB series

POLE MOUNTING BELT



PKB-10PM, 10P



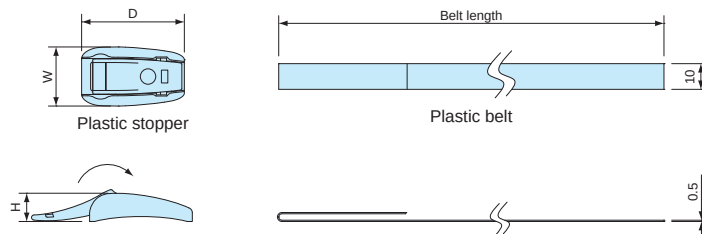
PKB-10S, 20S

- Pole mounting belt for attachment of enclosures with suitable pole mount brackets or construction onto poles.
- Designed for one time use only (not reusable).
- Strong stainless steel clamping type and easy installation plastic type are available.

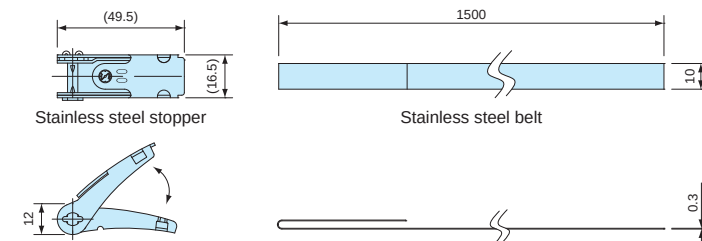
PKB dimensions

■ DXF/DWG/PDF drawings available on our website.

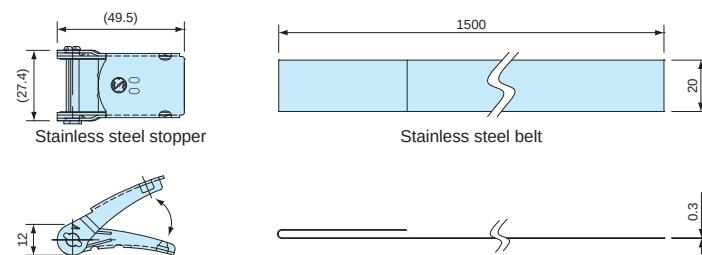
PKB-10PM, 10P



PKB-10S



PKB-20S



Components

Part name	Material	Color / Finish
Stopper	Stainless steel SUS304 • POM	Barrel finish • Black
Belt	Stainless steel SUS430 • PET	Bright annealed finish • Gray

Product no. / Details

Product no.	W	D	H	Belt length	Belt material	Tensile strength (horizontal)	Weight (g)	Pack of
PKB-10PM	23	24	11	500 mm	PET	0.8kN	14	2
PKB-10P	23	40	11	1,500 mm	PET	1.3kN	31.8	2
PKB-10S	—	—	—	1,500 mm	Stainless steel SUS304	1.4kN	101.6	2
PKB-20S	—	—	—	1,500 mm	Stainless steel SUS430	2.9kN	182.2	2

PMF series

PROTECTIVE VENT

Pressure Equalization / Ventilation



Application Example

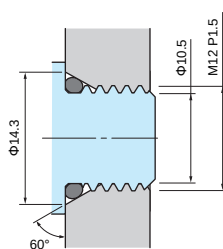
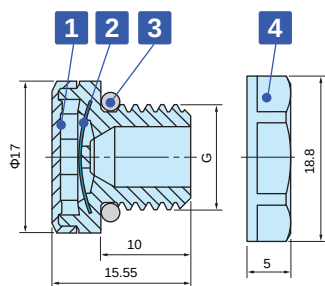
- Protective vent protects the enclosure from deformation by equalizing internal and external pressure differences, as well as venting the gas generated within the enclosure.
- IP68 protection class (water depth 2 meters / 60 mins) with an operating temperature range -40°C ~ +125°C allows them to be used in harsh environments.
- PMF-12 and PMF-12HS models are suitable for up to 5 and 50 liters respectively.
- Recommended to be installed at the sides of the enclosure.
- Use in industrial and electrical / electronic products only; not suitable to be used in medical, food and beverage, and cosmetic industries and related industrial equipment.

PMF dimensions

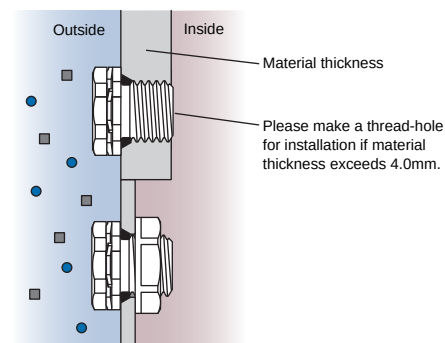
Hole milling drawings

Installation drawings

- DXF/DWG/PDF drawings available on our website.



- Recommended for prevention of O-ring deformation during tightening.
If tightened with a lock nut, a standard through-hole is sufficient for installation.



- If used with a lock nut, material thickness should not exceed 4.0mm.

Technical Data

Product no.	PMF-12	PMF-12HA
Airflow	450ml / min (dp = 7kPa)	4,000ml / min (dp = 7kPa)
Recommended torque	0.6 ~ 0.8N • m	0.6 ~ 0.8N • m
Certifications	IEC60529 (Protection class test) : IP65 • IP66 • IP67 • IP68 • IP69K IEC60068-2-1, 2, 14 (Heat resistance test) : - 40°C ~ +125°C IEC60068-2-78 (Humidity test) : 85°C • 85% humidity • 1,000 hours IEC60068-2-11, 52 (Salt spray test) IEC60068-2-64 (Vibration test) GR-3108-CORE (Corrosive gas test) UL94V-0 (Flame-resistant) • UL746C f1	

Product no. / Details

Product no.		Material				G		Lock nut
● Light gray	● Black	1 Housing	2 Filter	3 O-ring	4 Lock nut	Thread size	Mount hole	SW
PMF-12S	PMF-12B	PA66 / 6	PTFE	Silicone	PA66 (UL94V-2)	M12 x P1.5	Φ12.2	17
PMF-12HAS	PMF-12HAB	PA66 / 6	PTFE	Silicone	PA66 (UL94V-2)	M12 x P1.5	Φ12.2	17

PMF-32S

LARGE PROTECTIVE VENT

Pressure Equalization / Ventilation



Application Example

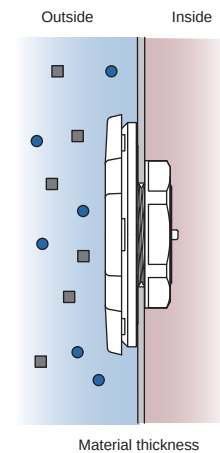
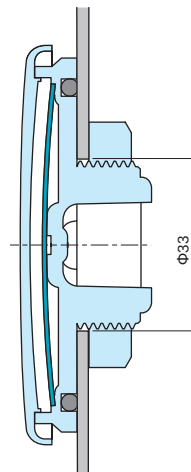
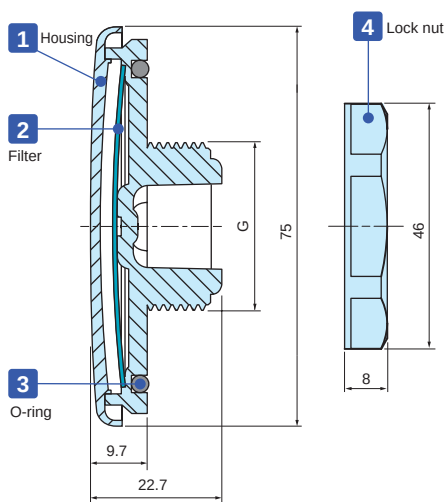
- Maintains exceptionally high airflow in extra-large enclosures with volumes of up to 200 liters in an outdoor environment.
- Protective vent protects the enclosure from deformation by equalizing internal and external pressure differences, as well as venting the gas generated within the enclosure.
- Simple and flat design allows it to be used on a wide variety of enclosure types.
- IP68 protection class rated (water depth 2 meters / 60 mins) with an operating temperature range of -40°C ~ +125°C allows it to be used in harsh environments.
- Compliant with Solar industry testing IEC62108 standards.
- Recommended to be installed at the sides of the enclosure.
- Use in industrial and electrical / electronic products only; not suitable to be used in medical, food and beverage, and cosmetic industries and related industrial equipment.

■ DXF/DWG/PDF drawings available on our website.

PMF-32 dimensions

Hole milling drawings

Installation drawings



■ If used with a lock nut, material thickness should not exceed 5.0mm.

Technical Data

Airflow	16ℓ / min (dp = 1.2kPa)
Recommended torque	5 N • m
Certifications	IEC529, 2nd (Protection class test) : IP66 • IP67 • IP68 • IP69K IEC60068-2-1, 2, 14 (Heat resistance test) : - 40°C ~ +125°C IEC60068-2-78 (Humidity test) : 85°C • 85% humidity • 1,000 hours IEC60068-2-11, 52 (Salt spray test) IEC60068-2-64 (Vibration test) IEC62108, 10.8 • 9 (Solar industry test) : Freezing • High temperature tes • Hail impact test GR-3108-CORE (Corrosive gas test) UL94V-0 (Flame-resistant) • UL746C f1

Product no. / Details

Product no.	Material				G			Lock nut SW
	1 Housing	2 Filter	3 O-ring	4 Lock nut	Thread size	Thread diameter	Mount hole	
PMF-32S	Polycarbonate	PTFE	Silicone	PA66	M32 x P1.5	Φ32	Φ33	41.5

VE8 series

ADHESIVE PROTECTIVE VENT FILTER



Technical Data

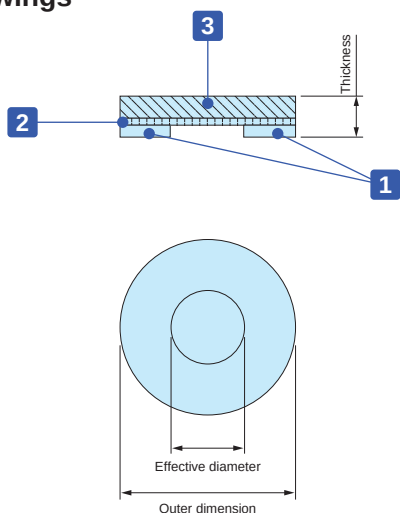
Protection class : Dustproof IP6X
 Waterproof IPX4, IPX7
 Airflow : 3,300ml/min/cm² (at 7Kpa)
 Operating temperature : -40°C ~ +100°C

- Vent filter protects the enclosure from deformation by equalizing internal and external pressure differences, as well as venting the gas generated within the enclosure.
- Allows water vapor molecules to diffuse through the microporous membrane.
- Highly water and oil repellent membrane protects electronic components from water, corrosive liquids, salts and dust.
- Easy installation adhesive filter.
- Recommended to be adhered onto flat plastic or metallic surfaces.

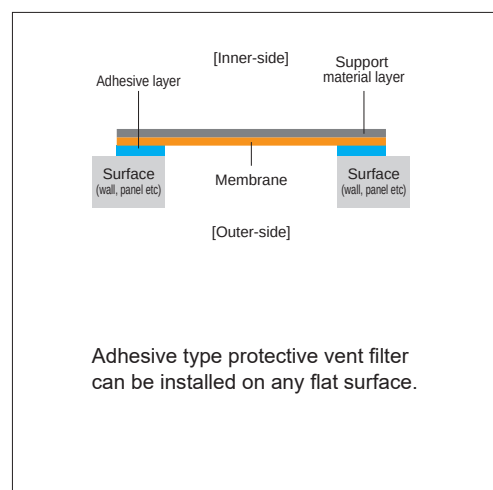
CAUTION

- Install only on the inner surface of the case / box with the membrane and adhesive side facing outwards.
- An initial period of 24 hours is required for the adhesive to properly bond to the surface. Avoid using the vent filter with a heavy load.
- Please do not adhere onto the top-side of enclosures. Rain water etc. will collect on the filter, which will weaken the adhesive seal and prevent proper ventilation.
- After degreasing and cleaning, adhere the filter without touching the center part of the vent filter.
- Use in industrial and electrical / electronic products only; not suitable to be used in medical, food and beverage, and cosmetic industries and related industrial equipment.

VE8 drawings



Installation drawings



Components

No.	Part name	Material	Color
1	Adhesive	Acrylic adhesive	Transparent
		Silicon adhesive (VE82029S, VE82029S-S)	
2	Filter	ePTFE (Oil-repellent type)	White
3	Support material	Polyester fabric	White

Product no. / Details

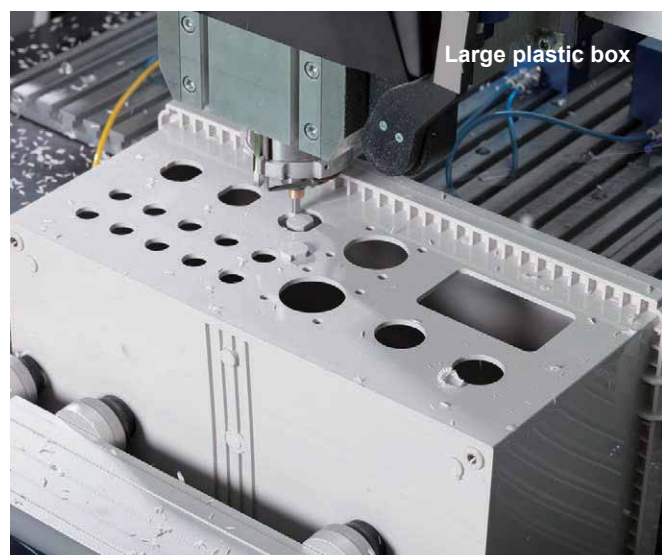
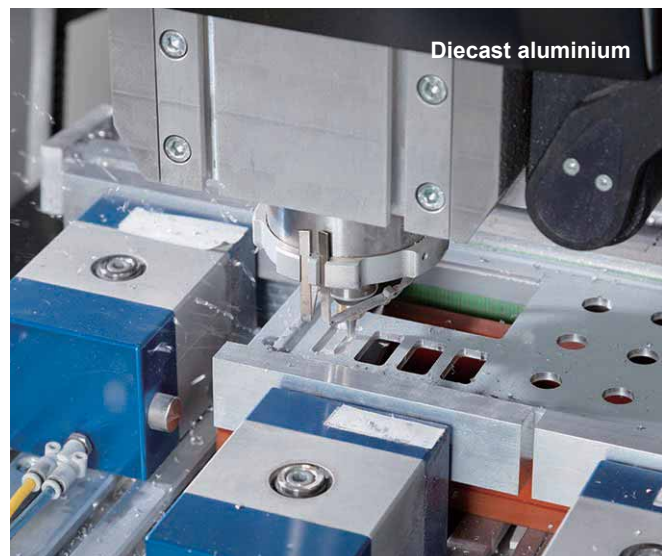
Product no.	Outer dimension (Φ-mm)	Effective diameter (Φ-mm)	Thickness (mm)	Sales unit
VE80308	7.6	3.3	0.26	8 pcs (per pack)
VE80814	14.0	8.0	0.26	4 pcs (per pack)
VE81221	21.5	12.5	0.26	4 pcs (per pack)
VE82029S	29.0	20.0	0.35	2 pcs (per pack)
VE80308-S	7.6	3.3	0.26	96 pcs (per sheet)
VE80814-S	14.0	8.0	0.26	56 pcs (per sheet)
VE81221-S	21.5	12.5	0.26	20 pcs (per sheet)
VE82029S-S	29.0	20.0	0.35	10 pcs (per sheet)

CNC MACHINING

CNC milling is a form of computer controlled machining. Similar in operation to drilling and cutting, it is able to create various hole styles and shapes by using a rotating cutting tool to bore into the object.

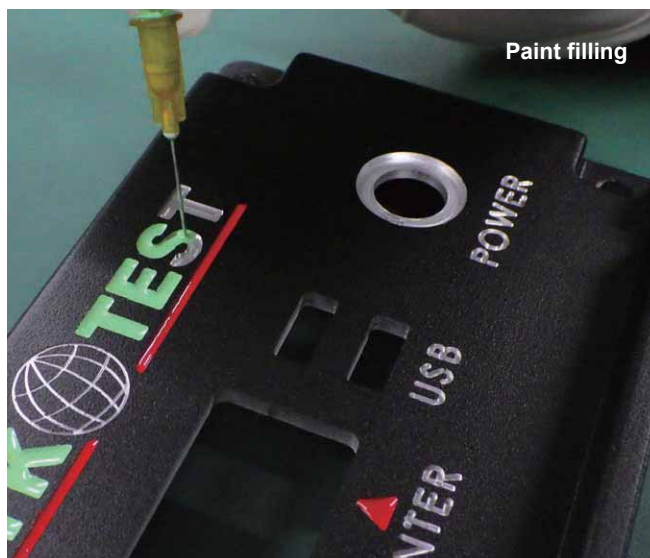
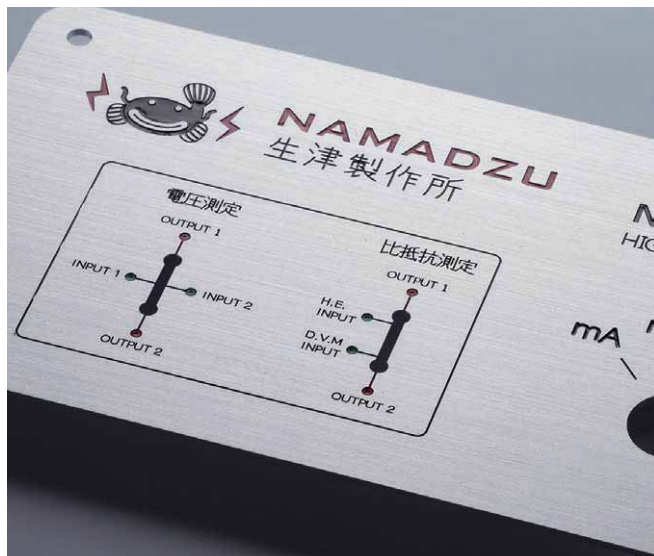


- Mainly used for plastic, aluminium die-cast, and aluminium extrusion material types.
- Able to perform milling for various shapes and sizes.
- Recommended for small quantity customization.



ENGRAVING

By having the drill-head slightly milling the surface, the engraving of fine text or complex designs is able to be performed on a variety of surfaces, be it flat, curved, and so on. Suitable for small batch print, and/or simple lettering. Font shall be similar to VAG Rounded font type.



LASER CUTTING

Laser cutting utilizes a laser to perform cutting on an object, allowing various types and shapes of holes to be cut.

New fiber laser machine allows the processing of aluminium sheets with both high precision and speed. Processing of Pure Aluminium 1050 is also possible with minimal burr as compared to conventional CO² laser machines, which causes excessive burring.

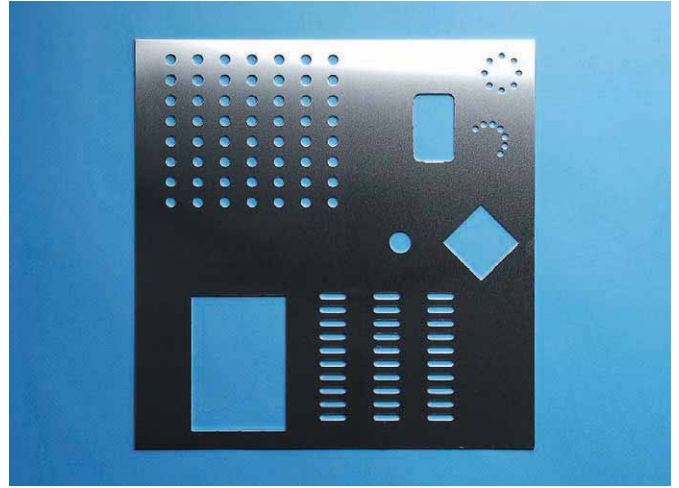
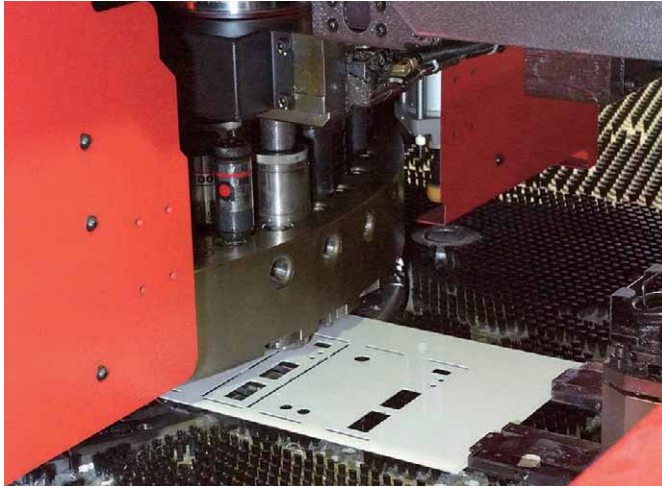


PUNCHING PRESS

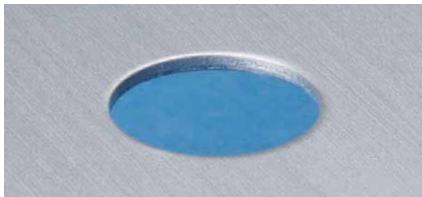
What is punching press? It is a type of machine press used to cut holes in material via the use of various sized die sets.

Punching press allows the realization of high cost performance due to its high speed automated turret punching process, which significantly reduces machining lead-time.

Due to its ability to create designated sized holes by means of rapid multiple hole punches, this enables it to punch holes of various sizes and types quickly and efficiently.

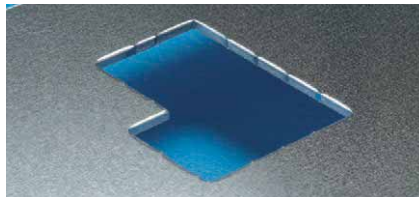


Circular hole



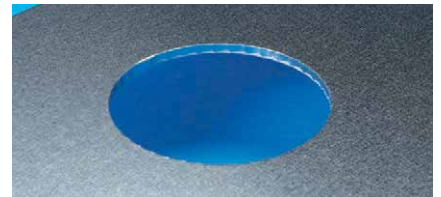
Circular holes as small as 1.0mm in diameter can be punched.

Nibbling press (rectangle)



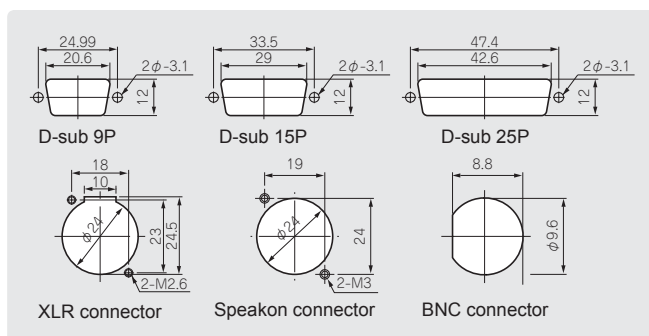
Complex or large rectangular shapes can be punched out with multiple presses.

Nibbling press (round)

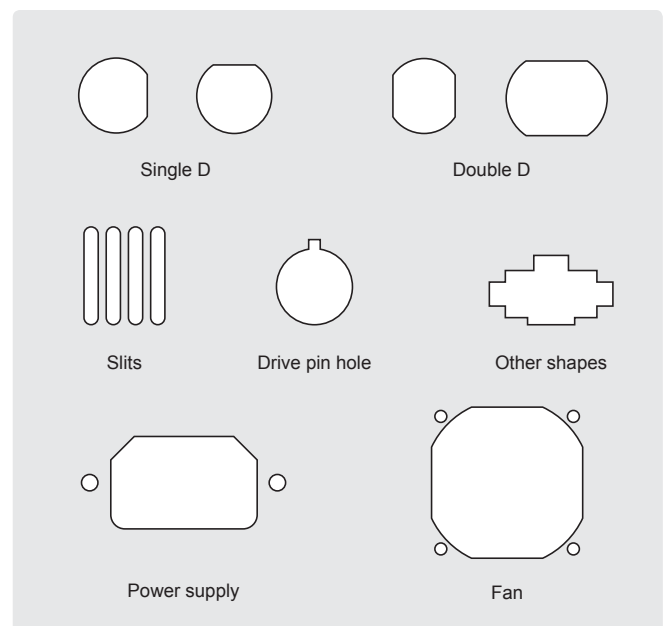


Punching of large circular holes with multiple smaller die strokes.

Common connector shapes



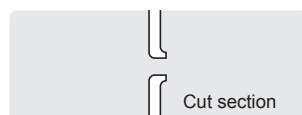
Unique shapes



Burring punch



Increasing surface area on a thin metallic sheet for screw threads to bore into.

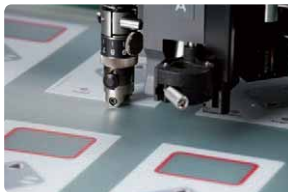


DIGITAL PRINTED OVERLAY



3 reasons for low initial costs

Reason
①



Cutting process



Avoiding the cost for cutting die manufacturing via our in-house cutting plotter.

Reason
②

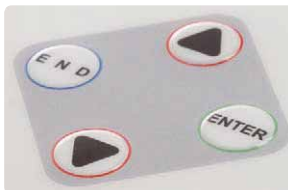


Printing process



Saving the cost for print plates via utilization of our in-house digital inkjet printer.

Reason
③

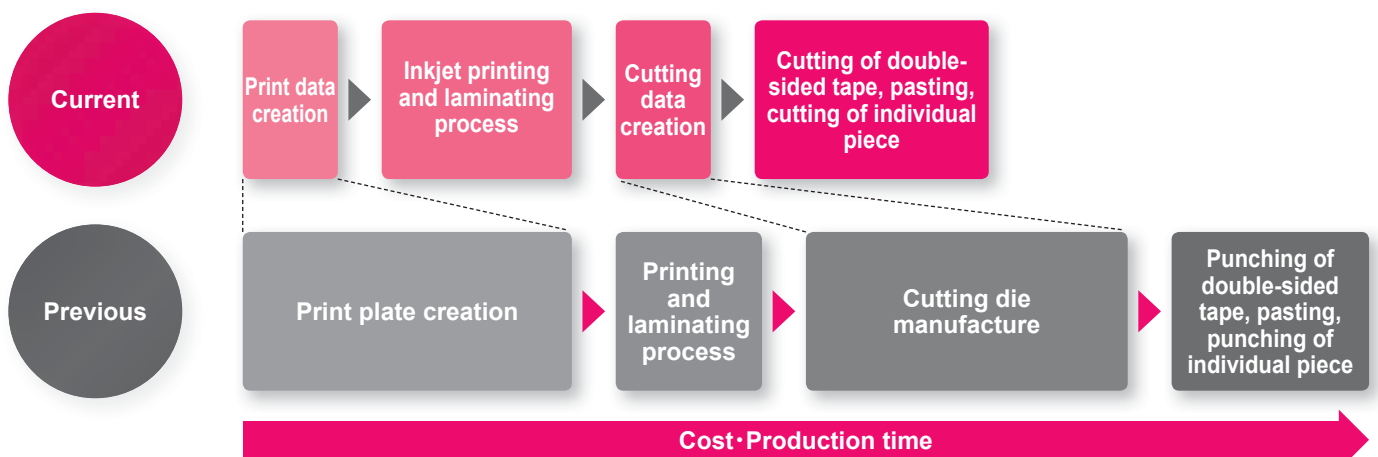


Embossing process



Reducing the cost for the embossing die via our new die manufacturing process.

Comparison of current and previous manufacturing methods



PRODUCTION PROCESS



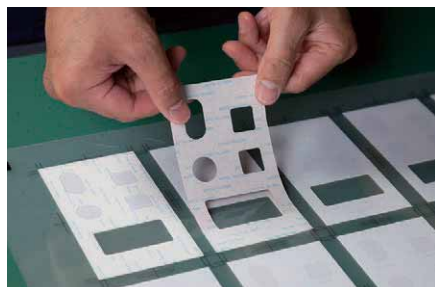
1. Inkjet printing on film



2. Laminating



3. Cutting double-sided tape



4. Sticking double-sided tape on printed film



5. Cutting the sheet to size



6. Embossing



7. Machining on enclosure



8. Sticking overlay sheet onto enclosure



9. Complete

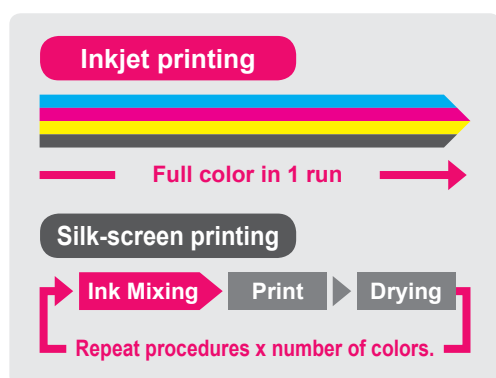
CUSTOMIZATION EXAMPLE



INKJET PRINTING



Full color digitally designed image
can be printed in 1 run.
No cost difference regardless of the
number of colors used.



Low printing cost
Full color print possible
in small quantities

Inkjet printing	1 run only for full color print			
Printing cost Full color				
Silk-screen printing	Printing cost x number of colors			
Printing cost Color 1	Printing cost Color 2	Printing cost Color 3	Printing cost Color 4	

High quality printing of photo image and color gradation.

Print photo images in maximum 1,800 x 1,800 dpi quality.

Pictures, logos and unique designs with color gradation can be recreated in a high quality print.



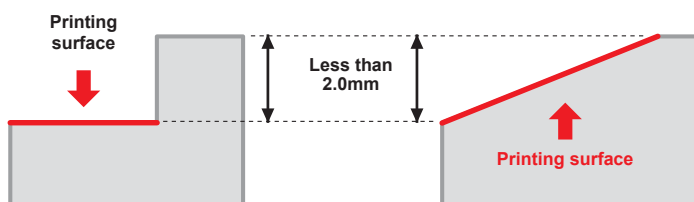
Maximum printable enclosure size



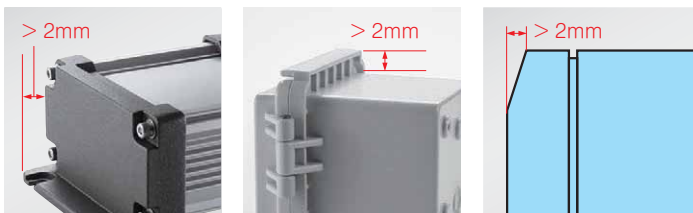
Printable on surfaces with height differential

Printing is possible on recessed, sloped and rounded sections.

Gap difference is less than 2.0mm.



*Not suitable if height difference is more than 2.0mm.



Printed example

