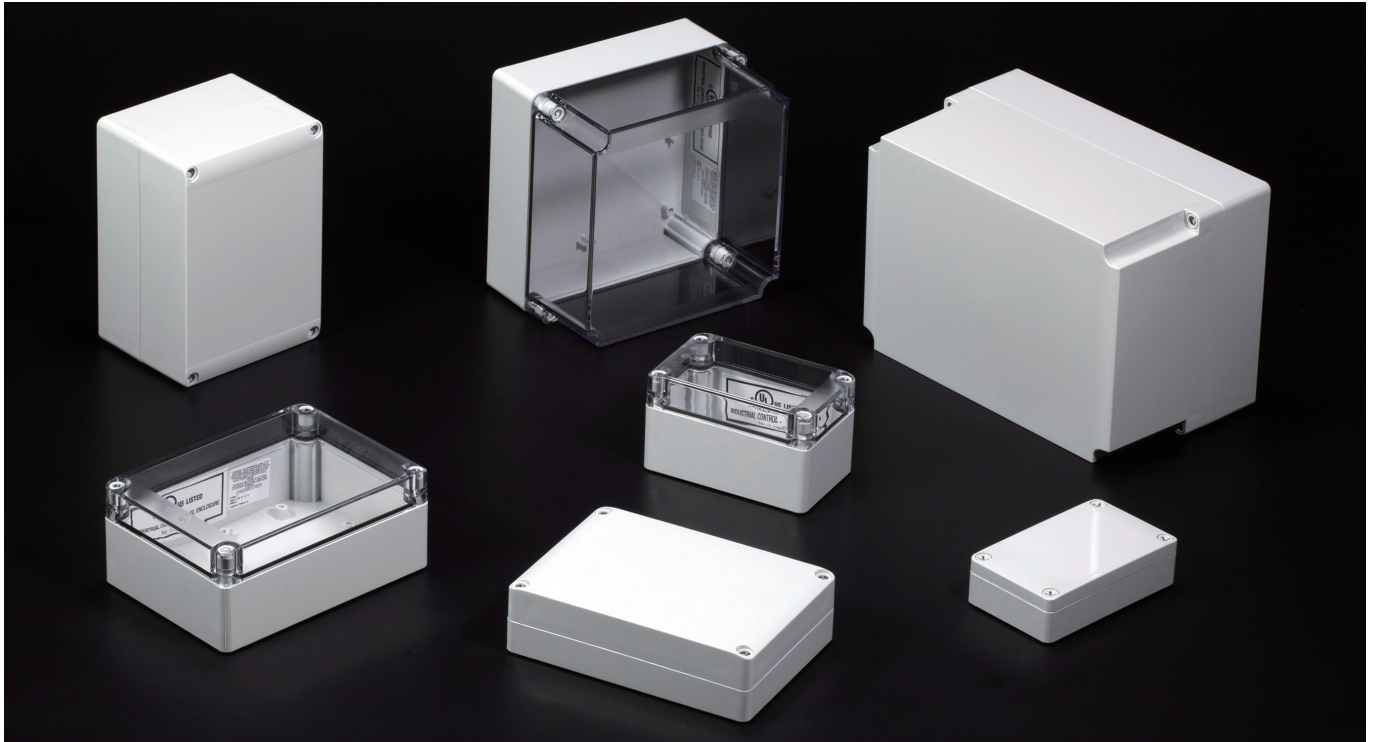


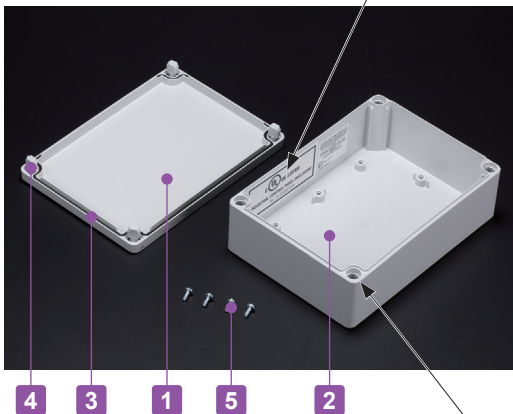


Technical Data

Protection class: NEMA Type 4, 4X, 6, 12, 13
(equivalent to IP66 / 67)
Operating temperature: -20°C ~ +75°C
Recommended torque: 1N • m ~ 1.5N • m



UL certification sticker



- UL FILE No,E343339 / UL508A(USA), CSA C22.2 No. 14(Canada) certified products.
- Applicable standard: INDUSTRIAL CONTROL PANELS
See www.ul.com for additional information.
- NEMA standards are developed by the National Electrical Manufacturers Association (NEMA) in USA.
- NEMA Type 4X rating is equivalent to IP56 protection rating.
- NEMA Type 6 rating is equivalent to IP67 protection rating.

- Make sure to read "Precautions for UL Certified Products" notice before ordering.
- UL certified products are built to order. Refer to page SPCP.U-2 for delivery time.

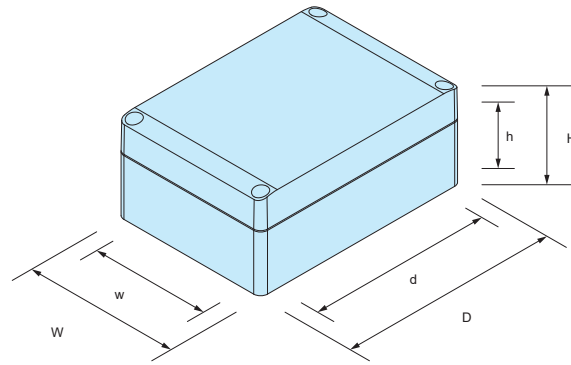
- UL certified polycarbonate enclosure for superior impact resistance.
- Available in 2 different cover types (white gray and transparent).
- Suitable to be used as controller, junction box, network devices, outdoor measuring instrument and others.
- Mountable on walls by using the cover holes for fastening without external wall mounting brackets.

Components

No.	Part name	Pcs	Material	Color / Finish
1	Cover	1	Polycarbonate (UL94V-2)	White gray (RAL 7035) • Transparent
2	Body	1	Glass fiber filled polycarbonate (UL94V-0)	White gray (RAL 7035)
3	Gasket	1	Polyurethane	Black
4	Cover screw	4	Polyamide	White gray
5	Self-tapping screw (for mounting plate)	4	Steel	Unichrome plated

SPCP.U dimensions

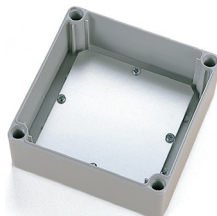
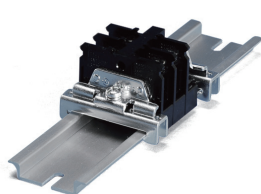
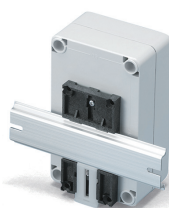
■ DXF/DWG/PDF drawings available on our website.



Product no. / Details

Product no.				External dimensions			Internal dimensions			Weight (g)	BTO
G.U type		T.U type		W	D	H	w	d	h		Delivery time
Cover	Body	Cover	Body								
● White gray		○ Transparent	● White gray								
SPCP081304LG.U		SPCP081304LT.U		75	125	35	65.5	91	20.5	120	6 months
SPCP081305LG.U		SPCP081305LT.U		75	125	50	65.5	91	35.5	150	6 months
SPCP081306G.U		SPCP081306T.U		75	125	60	65.5	91	45.5	161	6 months
SPCP081308G.U		SPCP081308T.U		75	125	75	65.5	91	60.5	213	6 months
SPCP081310G.U		SPCP081310T.U		75	125	100	65	90.5	85.5	278	6 months
SPCP081313G.U		SPCP081313T.U		75	125	125	64.5	90	110.5	306	6 months
SPCP101004LG.U		SPCP101004LT.U		100	100	35	90.5	66	20.5	124	6 months
SPCP101006G.U		SPCP101006T.U		100	100	60	90.5	66	45.5	165	6 months
SPCP131804LG.U		SPCP131804LT.U		125	175	35	115.5	141	20.5	237	6 months
SPCP131805LG.U		SPCP131805LT.U		125	175	50	115.5	141	35.5	282	6 months
SPCP131806G.U		SPCP131806T.U		125	175	60	115.5	141	45.5	297	6 months
SPCP131808G.U		SPCP131808T.U		125	175	75	115.5	141	60.5	378	6 months
SPCP131810G.U		SPCP131810T.U		125	175	100	115	140.5	85.5	463	6 months
SPCP131813G.U		SPCP131813T.U		125	175	125	115	140.5	110.5	531	6 months
SPCP131815G.U		SPCP131815T.U		125	175	150	114	139.5	135.5	600	6 months
SPCP181808G.U		SPCP181808T.U		175	175	75	165.5	141	60.5	475	6 months
SPCP181810G.U		SPCP181810T.U		175	175	100	165	140.5	85.5	584	6 months
SPCP181813G.U		SPCP181813T.U		175	175	125	164.5	140	110.5	652	6 months
SPCP181815G.U		SPCP181815T.U		175	175	150	164	139.5	135.5	738	6 months
SPCP182508G.U		SPCP182508T.U		175	250	75	165.5	216	60.5	637	6 months
SPCP182510G.U		SPCP182510T.U		175	250	100	165	215.5	85.5	754	6 months
SPCP182515G.U		SPCP182515T.U		175	250	150	164	214.5	135.5	959	6 months

Accessories (Optional parts) ■ Not UL certified products.

Terminal block • Terminal cover STB • STC series
See page STB • STC-1 ~ STB • STC-4Mounting bracket SFL-1
See page SPCM • SPCP-ACC-1Mounting plate SMP series
See page SPCM • SPCP-ACC-1Cable gland
See page 181 ~ 193Ventilation plugs
See page 195 ~ 200DIN-rail FDR series
See page FDR-1-2DIN-Rail stopper bracket TKR series
See page DIN-ACC-2DIN-rail mounting base DRA series
See page DIN-ACC-1Pole mounting bracket
See page SSK-1Outdoor roof for SPCM • SPCP SR series
See page SPCM • SPCP-ACC-2

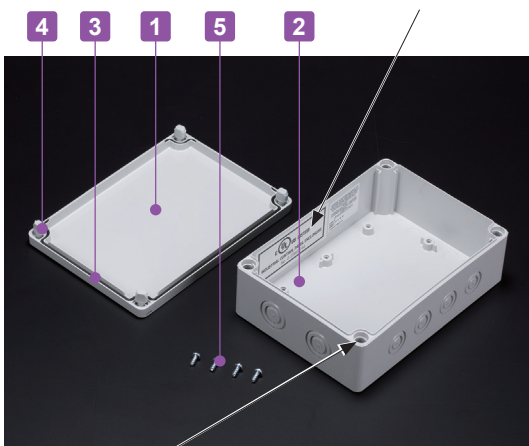


Technical Data

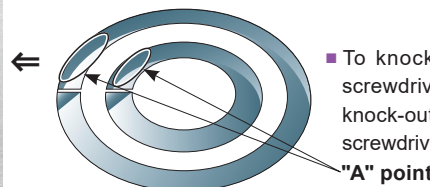
Protection class: NEMA Type 4, 4X, 6, 12, 13
(equivalent to IP66 / 67)
Operating temperature: -20°C ~ +75°C
Recommended torque: 1N • m ~ 1.5N • m



UL certification sticker



- Mountable on walls by using the cover holes for fastening.



- To knock out the hole covers, rest a flathead screwdriver at the "A" points, and punch out the knock-outs by hammering on the rear end of the screwdriver handle with a hammer.

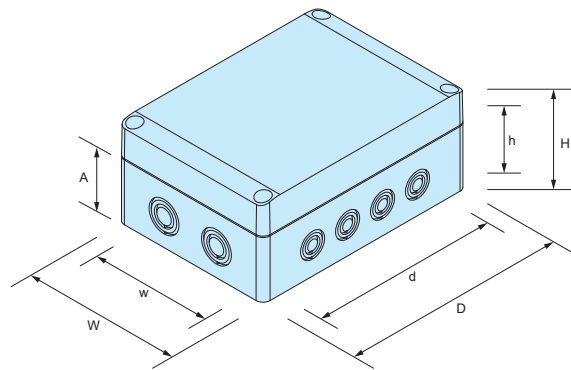
"A" point

Components

No.	Part name	Pcs	Material	Color / Finish
1	Cover	1	Polycarbonate (UL94V-2)	White gray (RAL 7035) • Transparent
2	Body	1	Glass fiber filled polycarbonate (UL94V-0)	White gray (RAL 7035)
3	Gasket	1	Polyurethane	Black
4	Cover screw	4	Polyamide	White gray
5	Self-tapping screw (for mounting plate)	4	Steel	Unichrome plated

SPCM.U dimensions

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

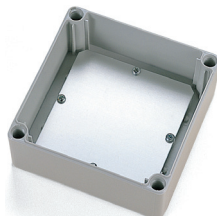
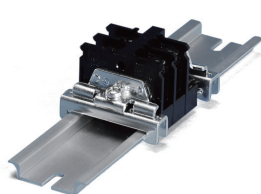
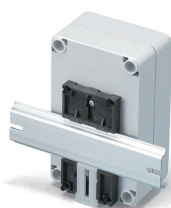


■ Metric knock-outs are on all 4 sides.

Product no. / Details

Product no.				External dimensions				Internal dimensions			Weight (g)	BTO
G.U type		T.U type		W	D	H	A	w	d	h		Delivery time
Cover	Body	Cover	Body									
● White gray		○ Transparent	● White gray									
SPCM081306G.U		SPCM081306T.U		75	125	60	50	65.5	91	45.5	159	6 months
SPCM081308G.U		SPCM081308T.U		75	125	75	50	65.5	91	60.5	208	6 months
SPCM081310G.U		SPCM081310T.U		75	125	100	50	65	90.5	85.5	275	6 months
SPCM081313G.U		SPCM081313T.U		75	125	125	50	64.5	90	110.5	299	6 months
SPCM131806G.U		SPCM131806T.U		125	175	60	50	115.5	141	45.5	294	6 months
SPCM131808G.U		SPCM131808T.U		125	175	75	50	115.5	141	60.5	373	6 months
SPCM131810G.U		SPCM131810T.U		125	175	100	50	115	140.5	85.5	450	6 months
SPCM131813G.U		SPCM131813T.U		125	175	125	50	115	140.5	110.5	519	6 months
SPCM131815G.U		SPCM131815T.U		125	175	150	50	114	139.5	135.5	588	6 months
SPCM182508G.U		SPCM182508T.U		175	250	75	50	165.5	216	60.5	633	6 months
SPCM182510G.U		SPCM182510T.U		175	250	100	50	165	215.5	85.5	745	6 months
SPCM182510HG.U		SPCM182510HT.U		175	250	100	75	164.8	215.4	85.5	718	6 months
SPCM182513HG.U		SPCM182513HT.U		175	250	125	75	164.3	214.9	110.5	855	6 months
SPCM182515G.U		SPCM182515T.U		175	250	150	50	164	214.5	135.5	946	6 months
SPCM182518HG.U		SPCM182518HT.U		175	250	175	75	163.5	214.1	160.5	983	6 months

Accessories (Optional parts) ■ Not UL certified products.

Terminal block • Terminal cover STB • STC series
See page STB • STC-1 ~ STB • STC-4Mounting bracket SFL-1
See page SPCM • SPCP-ACC-1Mounting plate SMP series
See page SPCM • SPCP-ACC-1Cable gland
See page 181 ~ 193Ventilation plugs
See page 195 ~ 200DIN-rail FDR series
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See page DIN-ACC-2DIN-rail mounting base DRA series
See page DIN-ACC-1Pole mounting bracket
See page SSK-1Outdoor roof for SPCM • SPCP SR series
See page SPCM • SPCP-ACC-2



Precautions for UL Certified Products

Please note that the important information remains the same even in case of ordering customized product(s).

1. UL certified products are not returnable or replaceable (except for defects).
2. Each UL certified product has a unique UL certification sticker with a serial number.
This sticker cannot be easily removed and in the event where it is damaged or the characters are illegible, UL application may be rejected.
3. The position of the UL certification sticker is determined according to the product size and cannot be changed. Please check the position of the sticker on the drawing (such as CAD, PDF or other drawings) of the corresponding model number. Drawings are downloadable from our website.
4. The serial number on the UL certification sticker cannot be reissued with the same serial number.
5. Defective products (such as those with molding error) are subject of replacement.
Note that the replacement(s) will incur a manufacturing and delivery lead-time; the serial number will also change.
6. UL certification sticker cannot be sold or issued separately (each product has an unique UL certification sticker attached).
7. Enclosure model number cannot be changed when applying for UL certification as each UL registered serial number is unique to each individual enclosure that is manufactured.
8. Customers are responsible for the UL application for the final product.
TAKACHI does not offer any application support, documentation assistance, or any other forms of guidance etc. related to the application process.
9. For details on UL application and E-numbers, please contact UL directly.

Specifications Overview

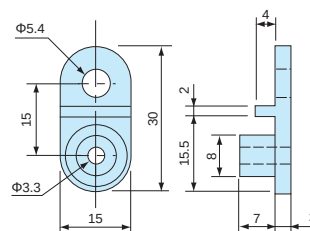
UL508A is a standard for industrial control panels published by Underwriters Laboratories Limited Liability Company (UL LLC) in USA.

NEMA standards are a set of technical standards developed by the National Electrical Manufacturers Association (NEMA) in USA.

The NEMA Type 4X rating is equivalent to the IP56 protection rating.

The NEMA Type 6 rating is equivalent to the IP67 protection rating.

SFL-1 PLASTIC MOUNTING BRACKET



Product no. / Feature

Product no.	Material	Screw	Pcs
SFL-1	Polycarbonate	M4 Tapping	4

SMS4-8 MOUNTING SCREW



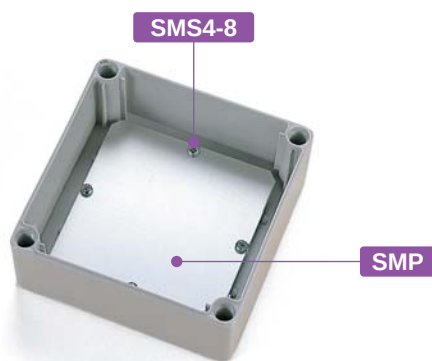
- Mounting screws for PCB mounting on SPCP • SPCM series.
※1 set included with each SPCP • SPCM enclosure.

Product no. / Feature

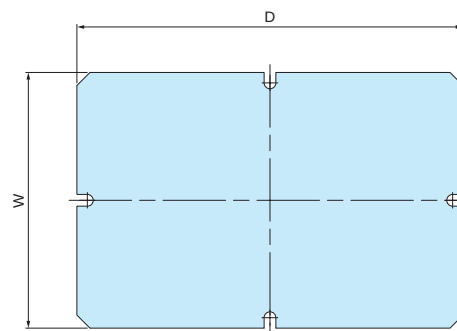
Product no.	Material	Screw	Pcs
SMS4-8 (M4-8 Pan head tapping)	Steel	Trivalent chromate	4

SMP SERIES ALUMINIUM MOUNTING PLATE

SMP dimensions



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



Product no. / Dimensions

Product no.	Suitable box	W	D	Weight (g)
SMP0813	SPCM • SPCP0813	48	98	18
SMP1010	SPCM • SPCP1010	78	78	24
SMP1313	SPCM • SPCP1313	98	98	40.5
SMP1318	SPCM • SPCP1318	98	148	61
SMP1818	SPCM • SPCP1818	148	148	93
SMP1825	SPCM • SPCP1825	148	223	140.5

- Customization services (clinching standoffs, hole milling, and others) available.
See website for more details.



SR SERIES

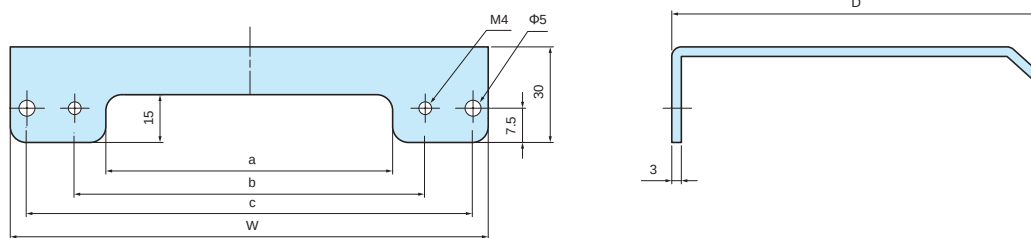
OUTDOOR ROOF for SPCM • SPCP



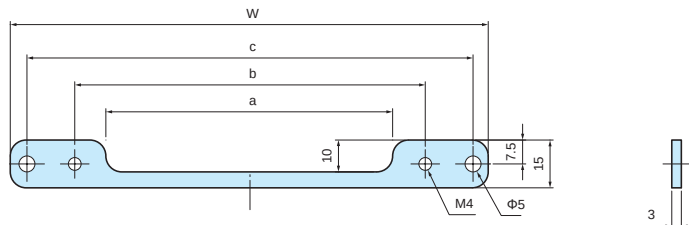
■ Roof and spacer attachments are easily attached onto the enclosure using existing cover fastening holes.

■ Recommended for outdoor environments for protection against rain, etc.

Roof



Spacer



Components

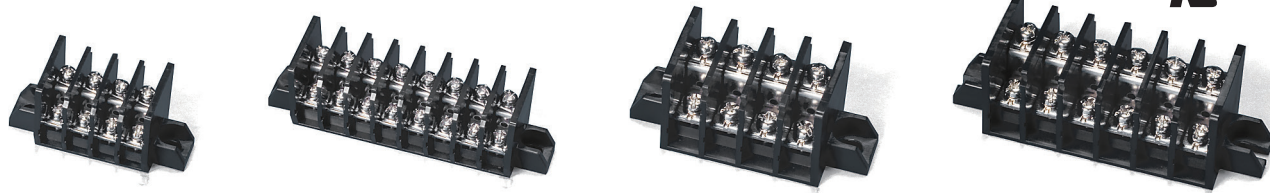
No.	Part name	Pcs	Material	Color / Finish
1	Roof	1	Aluminium A1050P t = 3.0mm	Light gray / Painted
2	Spacer	1	Aluminium A1050P t = 3.0mm	Light gray / Painted
-	Screw	4	Stainless steel	Unfinished
-	O-ring	4	NBR	Black

Product no. / Dimensions

Product no.	W	D	a	b	c	Suitable box
SR0808	100	90	50	60	90	SPCM • SPCP 081308
SR0810	100	115	50	60	90	SPCM • SPCP 081310
SR0813	100	140	50	60	90	SPCM • SPCP 081313
SR1308	150	90	90	110	140	SPCM • SPCP 131308 131808
SR1310	150	115	90	110	140	SPCM • SPCP 131310 131810
SR1313	150	140	90	110	140	SPCM • SPCP 131313 131813
SR1315	150	165	90	110	140	SPCM • SPCP 131815
SR1808	200	90	140	160	190	SPCM • SPCP 181808 182508
SR1810	200	115	140	160	190	SPCM • SPCP 181810 182510
SR1813	200	140	140	160	190	SPCM • SPCP 181813
SR1815	200	165	140	160	190	SPCM • SPCP 181815 182515

STB SERIES

TERMINAL BLOCK

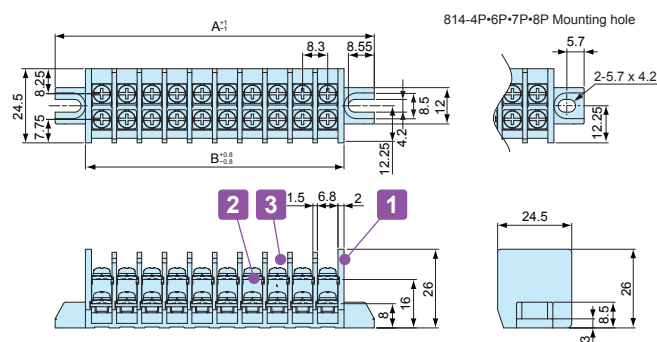
 (FW2)


■ Terminal block for SPCM • SPCP series.

Components

No.	Part name	Pcs	Material	Color / Finish
1	Base	1	PBT (UL94V-0)	Black
2	Terminal	1	Brass	Nickel plated
3	Terminal screw	2 x P	Steel	Nickel plated
—	Mounting screw	4	Steel	Trivalent chromate

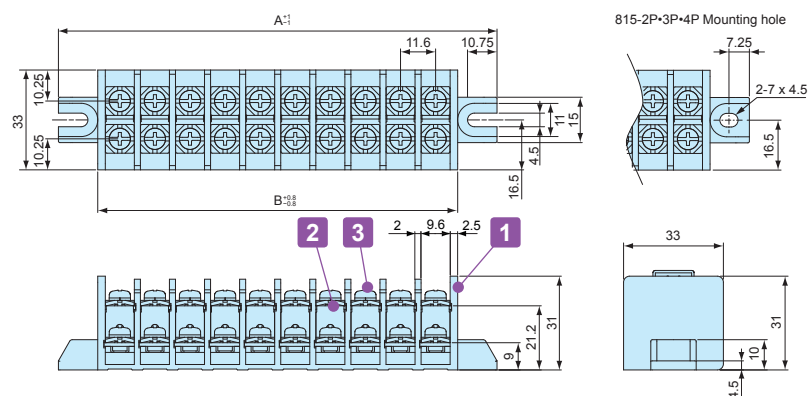
STB-814



Specification

1. Electrical Rating 300V 30A
2. Insulation Resistance DC500V 1000MΩ ~
3. Withstand Voltage AC2500V (Tested for 1 min.)
4. Operating Temp. Range -25°C ~ +80°C
5. Storage Temp. Range -25°C ~ +80°C

STB-815



Specification

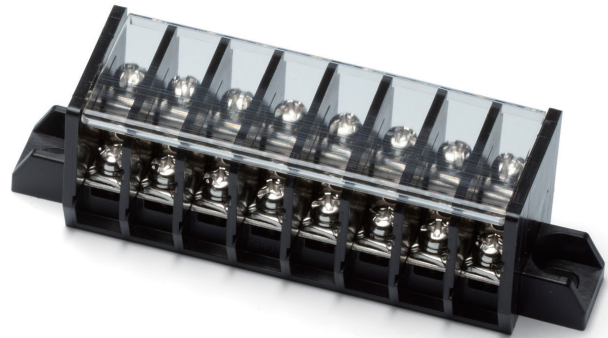
1. Electrical Rating 300V 30A
(600V 30A JIS IEC compliant)
2. Insulation Resistance DC500V 1000MΩ ~
3. Withstand Voltage AC2500V (Tested for 1 min.)
4. Operating Temp. Range -25°C ~ +80°C
5. Storage Temp. Range -25°C ~ +80°C

Product no. / Dimensions

Product no.	P (Number of poles)	A	B	Suitable SPCM • SPCP box W x D dimensions
STB814- 3P	3	47.4	27.4	75×125
STB814- 4P	4	55.7	35.7	100×100
STB814- 6P	6	72.3	52.3	175×175
STB814- 7P	7	80.6	60.6	100×100
STB814- 8P	8	88.9	68.9	75×125, 125×125
STB814- 9P	9	97.2	77.2	125×125, 125×175, 175×250
STB814-10P	10	105.5	85.5	125×175, 175×250
STB815- 2P	2	52.2	26.2	75×125
STB815- 3P	3	63.8	37.8	100×100
STB815- 4P	4	75.4	49.4	125×125
STB815- 6P	6	98.6	72.6	125×125, 125×175, 175×250
STB815-10P	10	145	119	175×175, 175×250

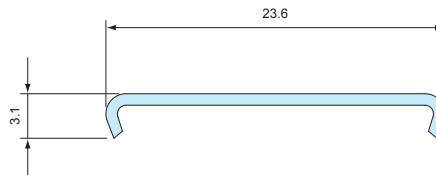
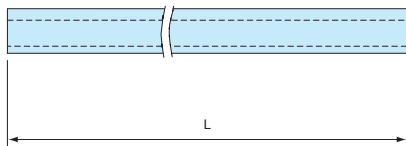
STC SERIES

TERMINAL COVER

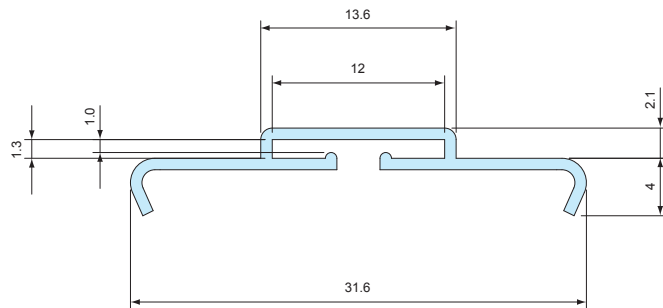
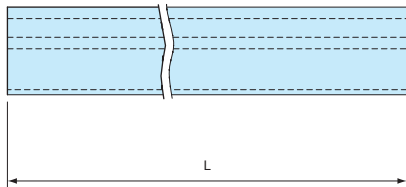


- Terminal cover for STB terminal block.
- Use for protecting terminals.

STC814



STC815



- Material / Color : Polycarbonate t=0.8mm / Transparent

Product no. / Dimensions

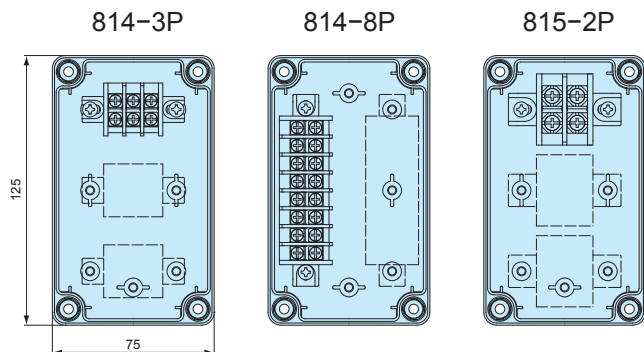
Product no.	P (Number of poles)	L	Compatible terminal
STC814- 3P	3	22.4	STB814- 3P
STC814- 4P	4	30.7	STB814- 4P
STC814- 6P	6	47.3	STB814- 6P
STC814- 7P	7	55.6	STB814- 7P
STC814- 8P	8	63.9	STB814- 8P
STC814- 9P	9	72.2	STB814- 9P
STC814-10P	10	80.5	STB814-10P
STC815- 2P	2	20.2	STB815- 2P
STC815- 3P	3	31.8	STB815- 3P
STC815- 4P	4	43.4	STB815- 4P
STC815- 6P	6	66.6	STB815- 6P
STC815-10P	10	113.0	STB815-10P

STB TERMINAL BLOCK MOUNTING POSITION

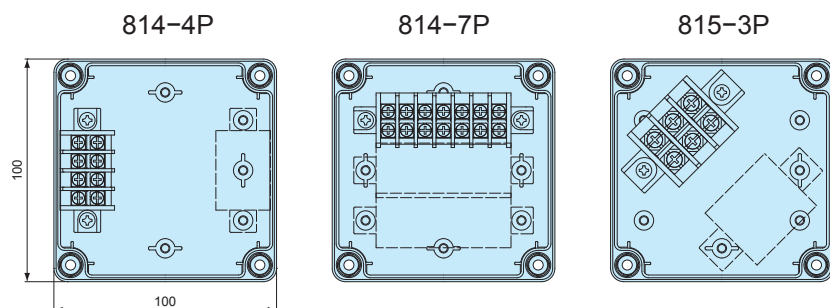
■ Drawings below are reference examples only.
DXF/DWG/PDF drawings available on our website.

■ Terminals can be installed in the area with dotted lines.

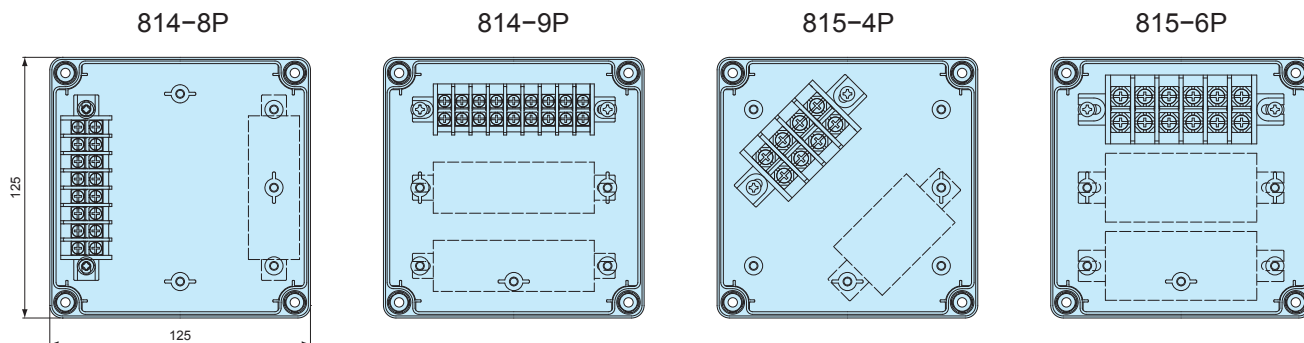
Suitable box SPCM/SPCP 081305 • 081306 • 081308 • 081310 • 081313



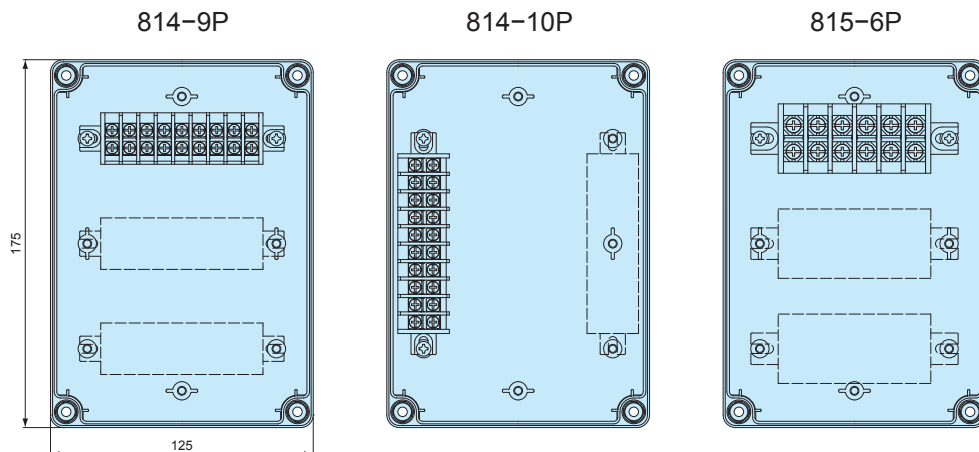
Suitable box SPCM/SPCP 101006



Suitable box SPCM/SPCP 131305 • 131306 • 131308 • 131310 • 131313



Suitable box SPCM/SPCP 131805 • 131806 • 131808 • 131810 • 131813 • 131815



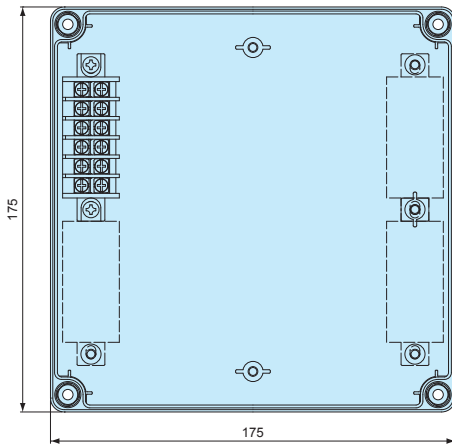
STB TERMINAL BLOCK MOUNTING POSITION

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

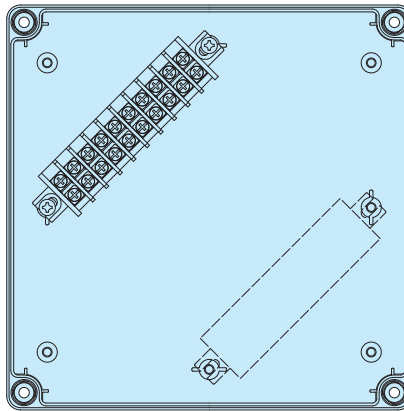
■ Terminals can be installed in the area with dotted lines.

Suitable box SPCM/SPCP 181808 • 181810 • 181813 • 181815

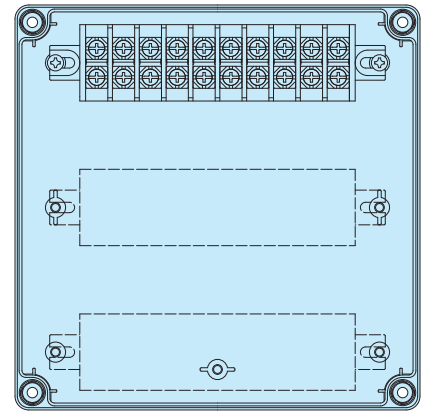
814-6P



814-10P

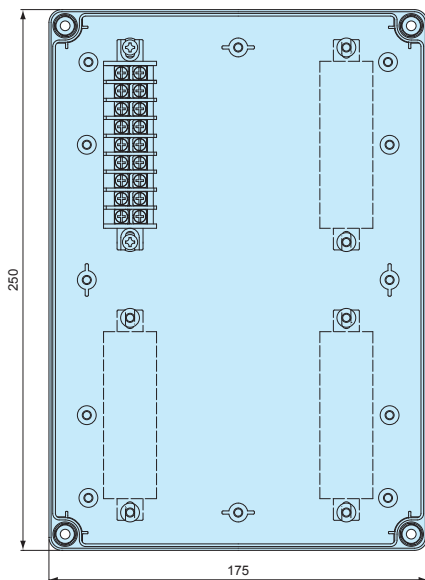


815-10P

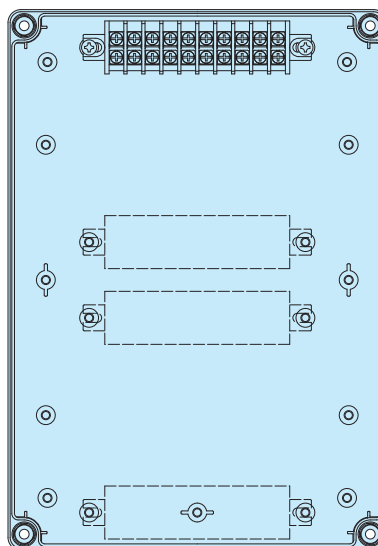


Suitable box SPCM/SPCP 182508 • 182510 • 182515

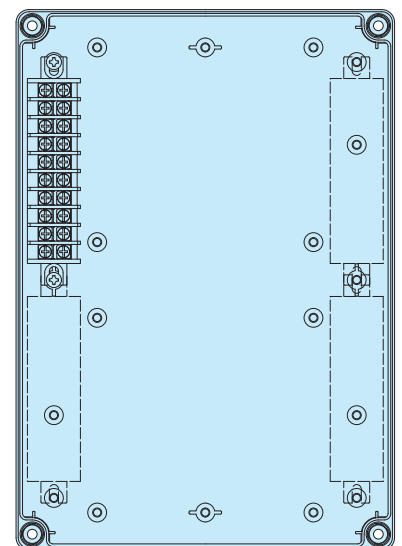
814-9P



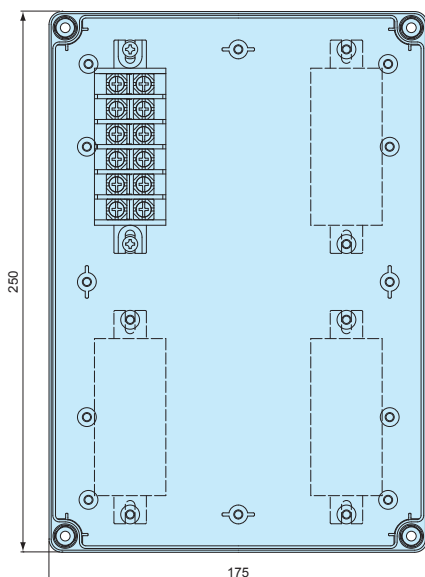
814-10P



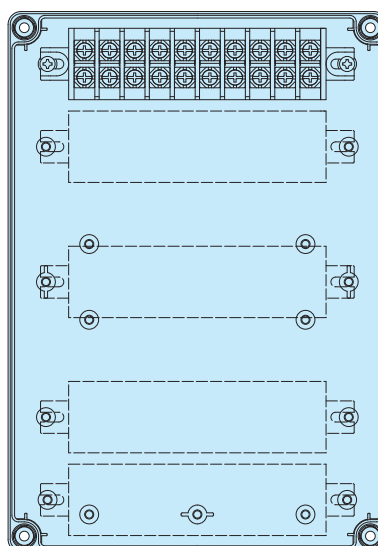
814-10P



815-6P

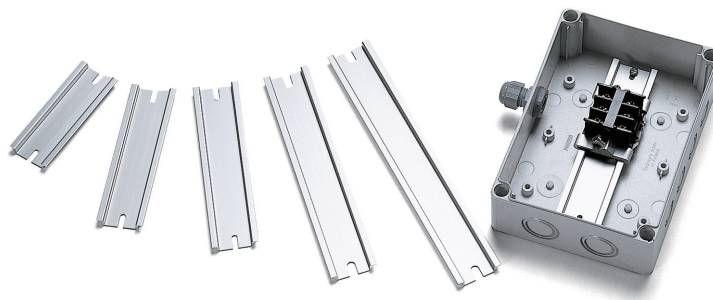


815-10P



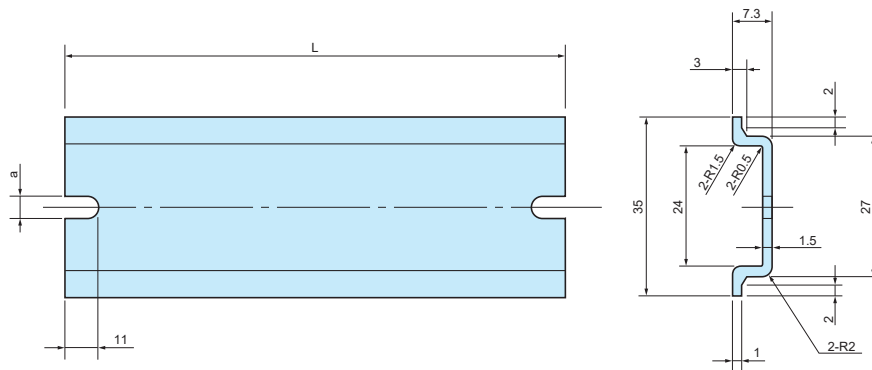
FDR series

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.

SSK SERIES

POLE MOUNTING BRACKET

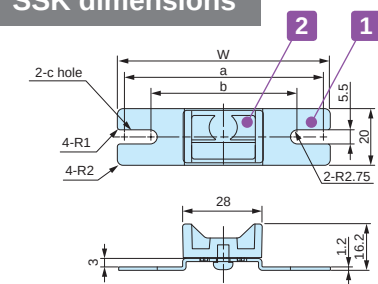


- Stainless steel pole mounting bracket for SPCM • SPCP and BCAL • BCAS series.
- Easy pole mount with the use of SSK-B mounting screw and PKB mounting belt.
- DXF/DWG/PDF drawings available on our website.
- SSK-P models includes plastic mounting brackets.

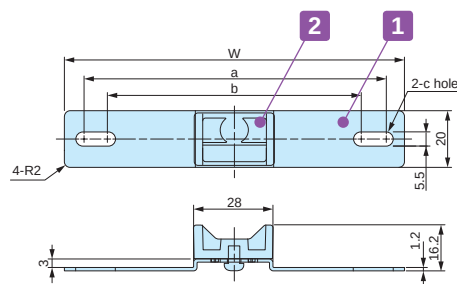


PKB series

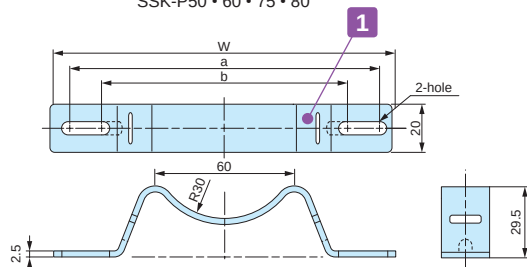
SSK dimensions



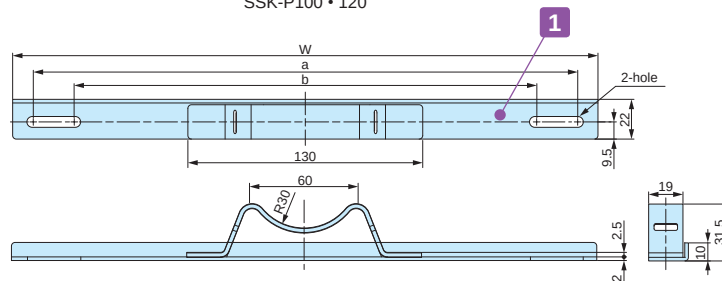
SSK-P50 • 60 • 75 • 80



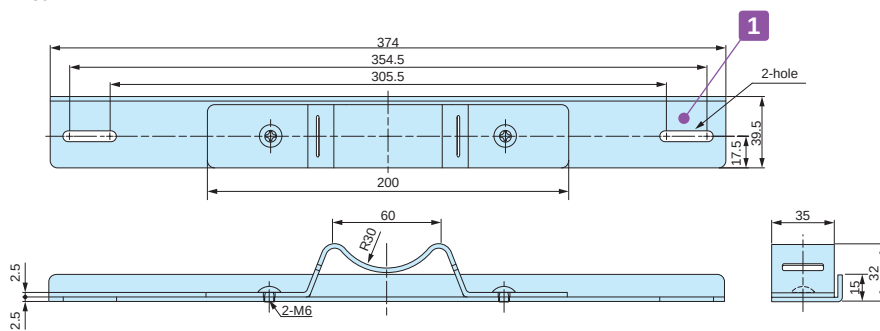
SSK-P100 • 120



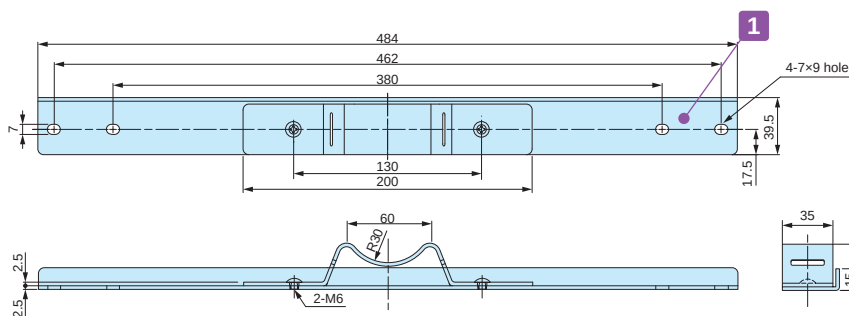
SSK-160 ~ 250



SSK-280 ~ 350



SSK-400



SSK-530

Components

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

■ Screws included with SSK brackets are for BCAP • BCAR • BCPK • BCPR series use only. For other series, please utilize SSK-B screw set.

Product no. / Dimensions

Product no.	W	a	b	c	Suitable mounting belt	Pack of
SSK-P50	50	44.5	37.5	5.5× 9	PKB-10PM, 10P PKB-10S	2
SSK-P60	60	54.5	47.5	5.5× 9	PKB-10PM, 10P PKB-10S	2
SSK-P75	75	69.5	55.5	5.5×12.5	PKB-10PM, 10P PKB-10S	2
SSK-P80	80	74.5	64.5	5.5×10.5	PKB-10PM, 10P PKB-10S	2
SSK-P100	100	88.1	76.5	5.5×11.3	PKB-10PM, 10P PKB-10S	2
SSK-P120	120	106.5	88.5	5.5×14.5	PKB-10PM, 10P PKB-10S	2
SSK-160	142	129.5	106.5	—	PKB-10PM, 10P PKB-10S	2
SSK-170	152	142.3	101	—	PKB-10PM, 10P PKB-10S	2
SSK-200	174	161.5	112.5	—	PKB-10PM, 10P PKB-10S	2
SSK-210	192	180.5	131.5	—	PKB-10PM, 10P PKB-10S	2
SSK-250	230	215.5	166.5	—	PKB-10PM, 10P PKB-10S	2
SSK-280	260	244.5	195.5	—	PKB-10PM, 10P PKB-10S	2
SSK-300	280	264.5	215.5	—	PKB-10PM, 10P PKB-10S	2
SSK-350	324	302.5	253.5	—	PKB-10PM, 10P PKB-10S	2
SSK-400	374	354.5	305.5	—	PKB-20S	2
SSK-530	484	462	380	7×9	PKB-20S	2

SSK-B SERIES

MOUNTING SCREW SET for SSK



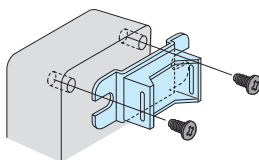
- Mounting screw set for use with SSK pole mounting bracket.
- See chart on page SSK-3 for appropriate bracket/screw/box combination.
- Material / Finish : Stainless steel / Unfinished.

Product no. / Dimensions

Product no.	Included screws	Suitable box	Pcs
SSK-B4-15N	M4-15 Pan head with nut	BCAS060905 ~ 212310	4
SSK-B4-25N	M4-25 Pan head with nut	SPCP • SPCM series	4
SSK-B5-10	M5-10 Pan head	BCAL series	4

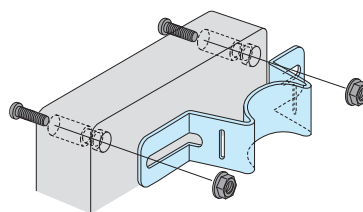
■ Installation Example

BCAS050604, 050605



Use screws included with SSK-P

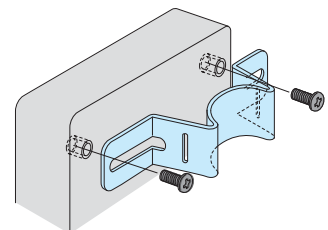
M4 / M5 Pan head with nut fastening



SSK-B4-15N

SSK-B4-25N

Pan head screw into insert nut



SSK-B5-10

POLE MOUNTING BRACKET / SCREW SET MATCHING CHART

SPCM • SPCP series

Box Product no.		SSK Product no.		Screw set Product no.
		Vertical mount	Horizontal mount	
SPCP SPCM	081304, 081305 081306, 081308 081310, 081313	SSK-P75	SSK-160	SSK-B4-25N
	101004, 101006	SSK-P100	SSK-P100	SSK-B4-25N
	131304, 131305 131306, 131308 131310, 131313	SSK-160	SSK-160	SSK-B4-25N
	131804, 131805 131806, 131808 131810, 131813, 131815	SSK-160	SSK-200	SSK-B4-25N
	181808, 181810 181813, 181815	SSK-200	SSK-200	SSK-B4-25N
	182508, 182510, 182515	SSK-200	SSK-280	SSK-B4-25N

BCAL series

Box Product no.		SSK Product no.		Screw set Product no.
		Vertical mount	Horizontal mount	
BCAL	191913 ※	SSK-P120	SSK-200	SSK-B5-10
	192813, 192818	SSK-200	SSK-250	SSK-B5-10
	193813, 193818	SSK-200	SSK-350	SSK-B5-10
	282813	SSK-250	SSK-280	SSK-B5-10
	283413	SSK-280	SSK-280	SSK-B5-10
	283813, 283818	SSK-280	SSK-350	SSK-B5-10
	285613	SSK-280	SSK-530	SSK-B5-10
	385618	SSK-400	SSK-530	SSK-B5-10

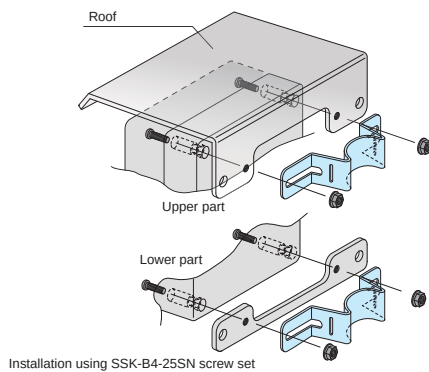
※Use screws included with SSK bracket for vertical mount

BCAS series

Box Product no.		SSK Product no.		Screw set Product no.
		Vertical mount	Horizontal mount	
BCAS	050604, 050605	SSK-P50	SSK-P60	Use screws included with SSK bracket
	060905	SSK-P60	SSK-P100	SSK-B4-15N
	071005 ※	SSK-P75	SSK-P100	SSK-B4-15N
	080806	SSK-P75	SSK-P75	SSK-B4-15N
	081104, 081107 081108, 081110	SSK-P75	SSK-P120	SSK-B4-15N
	081307, 081308	SSK-P75	SSK-160	SSK-B4-15N
	081807, 081808	SSK-P75	SSK-210	SSK-B4-15N
	082507, 082508	SSK-P75	SSK-280	SSK-B4-15N
	101007, 101010	SSK-P100	SSK-P100	SSK-B4-15N
	101807	SSK-P100	SSK-210	SSK-B4-15N
	102007	SSK-P100	SSK-250	SSK-B4-15N
	102307	SSK-P100	SSK-250	SSK-B4-15N
	121207, 121210	SSK-P120	SSK-200	SSK-B4-15N
	141709	SSK-160	SSK-200	SSK-B4-15N
	142309	SSK-160	SSK-250	SSK-B4-15N
	151507, 151510	SSK-170	SSK-170	SSK-B4-15N
	152004, 152007 152020, 152013, 152016	SSK-170	SSK-250	SSK-B4-15N
	152510, 152513	SSK-170	SSK-280	SSK-B4-15N
	161607	SSK-170	SSK-170	SSK-B4-15N
	202010, 202013 202016, 202019	SSK-250	SSK-250	SSK-B4-15N
	212310	SSK-250	SSK-250	SSK-B4-15N

※Use screws included with SSK bracket for vertical mount

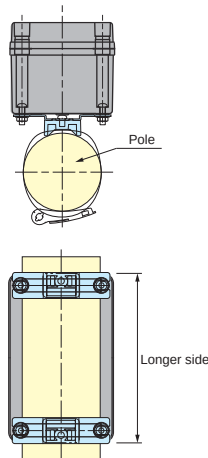
- For installation of SR series outdoor roof on SPCM • SPCP series
SR series (For SPCM • SPCP - see page SPCM • SPCM-ACC-2)



- Select SSK bracket depending on mounting type (Vertical or Horizontal).

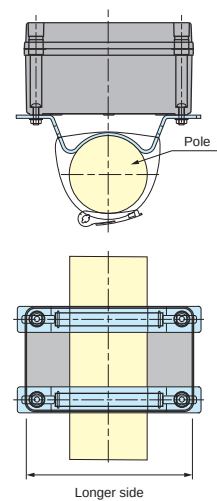
Vertical mount

(Longer vertical side)



Horizontal mount

(Longer horizontal side)

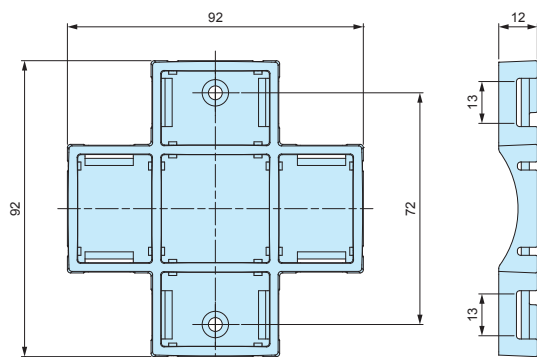
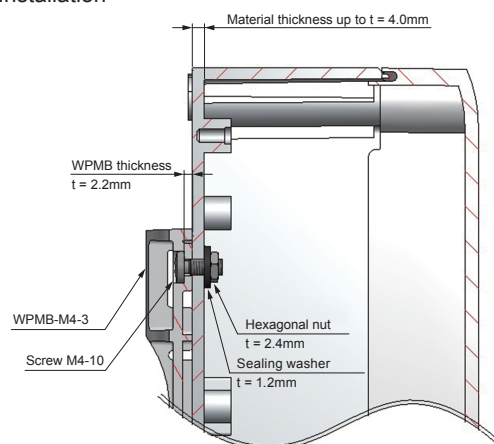


WPMB-M4-3 series**POLE MOUNTING BRACKET**

- Pole mount bracket made from weather resistant ASA material.
- Suitable for both vertical and horizontal mounting.
- IPX7 protection can be maintained through the use of sealing washers.
- Hole milling is required for bracket installation.
- Pole mount is possible with the use of PKB series mounting belt. (see page 324 for PKB series)

WPMB-M4-3 dimensions

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

**Installation****Components**

No.	Part name	Pcs	Material	Color / Finish
1	Bracket	1	ASA UL94HB	White gray • Dark gray
2	Sealing washer	2	NBR, SPCC	Black
3	Screw (M4-10 Pan head)	2	Stainless steel	Unfinished
4	Hexagonal nut (M4 - JIS Type 3)	2	Stainless steel	Unfinished

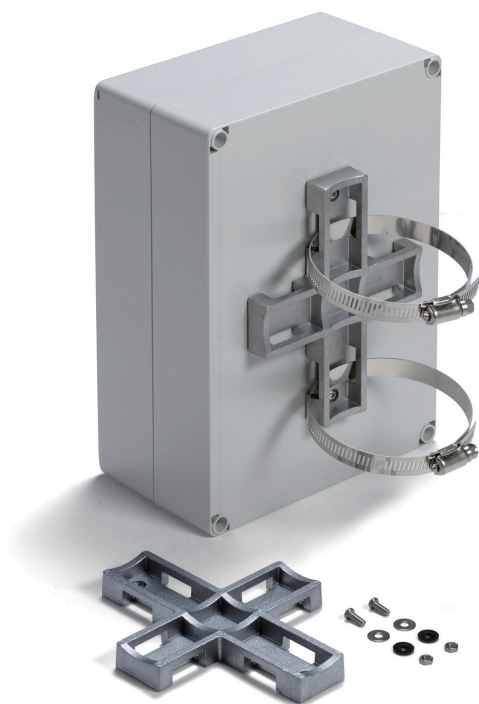
Product no. / Dimensions

Product no.		Material thickness to install	Recommended torque	Max load (kg)	Weight (g)
● White gray	● Dark gray				
WPMB-M4-3G	WPMB-M4-3D	Up to t = 4.0mm	0.45N • m	5	26.5

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

WGMB-2SW

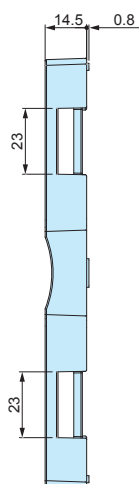
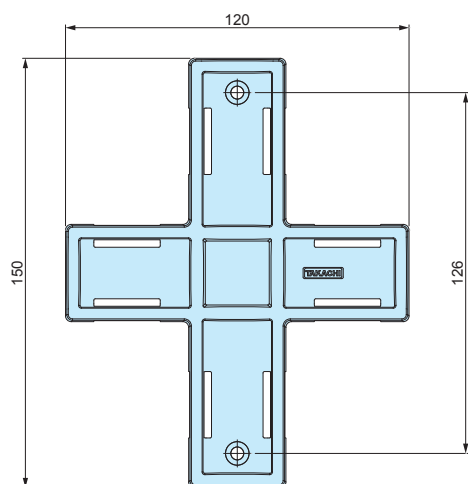
POLE MOUNTING BRACKET



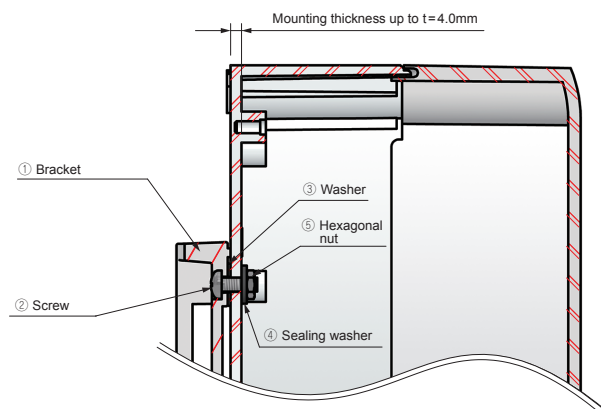
- Pole mount bracket made from robust diecast aluminium.
- Bracket can be mounted on both vertically, and horizontally.
- Sealing washers enables the installation to have a protection class equivalent to IPX7, X5.
- Hole milling on enclosures is required when installing mounting bracket.
- Pole mount is possible with the use of SNB or PKB series mounting belt. (See page 323 ~ 324)
- Installation can be done on a variety of enclosures made from plastic, diecast aluminium or stainless steel.

WGMB-2SW dimensions

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



Installation example



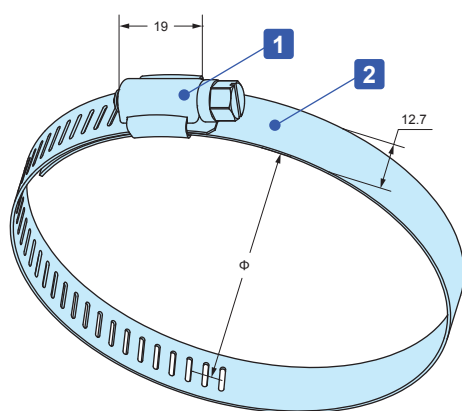
Components

No.	Part name	Pcs	Material	Color / Finish
1	Bracket	1	Diecast aluminium ADC12	Natural / Shot blast
2	Screw (Pan head M4-10)	2	Stainless steel	Unfinished
3	Washer	2	Stainless steel	Unfinished
4	Sealing washer	2	NBR, SPCC	Black
5	Hexagonal nut (M4-JIS Type3)	2	Stainless steel	Unfinished

Product no. / Details

Product no.	Mounting thickness	Recommended torque	Weight (g)
WGMB-2SW	Up to t=4.0mm	0.45N • m ~ 0.5N • m	130

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

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

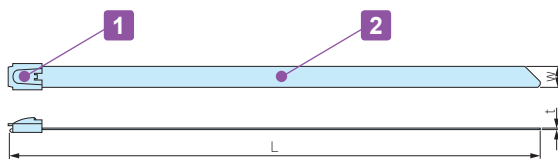
Product no. / Details

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

SCT series**STAINLESS STEEL TIES for POLE MOUNTING**

- Corrosion resistant stainless steel (SUS304) cable tie.
- Can be used to bundle cables or mounting enclosures to poles.
- Self-locking bracket allows easy mounting / cable bundling.
- Designed for one time use only (not reusable).

- Suitable for easy mounting.
- Wear gloves or other protections while installation.

Components

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

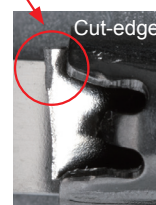
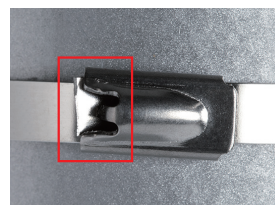
Product no. / Details

Product no.	W	L	t	Pack of
SCT 4.6- 100	4.6	100	0.25	10
SCT 4.6- 150	4.6	150	0.25	10
SCT 4.6- 200	4.6	200	0.25	10
SCT 4.6- 300	4.6	300	0.25	10
SCT 4.6- 500	4.6	500	0.25	2
SCT 4.6-1000	4.6	1,000	0.25	2
SCT 4.6-1500	4.6	1,500	0.25	2
SCT 7.9- 100	7.9	100	0.25	10
SCT 7.9- 150	7.9	150	0.25	10
SCT 7.9- 200	7.9	200	0.25	10
SCT 7.9- 300	7.9	300	0.25	10
SCT 7.9- 500	7.9	500	0.25	2
SCT 7.9-1000	7.9	1,000	0.25	2
SCT 7.9-1500	7.9	1,500	0.25	2

G3388**TIGHTEN GUN for SCT**

- Tool for cutting and tightening stainless steel strap.

*Be careful of the sharp cut-edge of strap.



Note: Tighten gun is not subject to RoHS regulations.

Product no.

G3388

PKB series**POLE MOUNTING BELT**

PKB-10PM, 10P



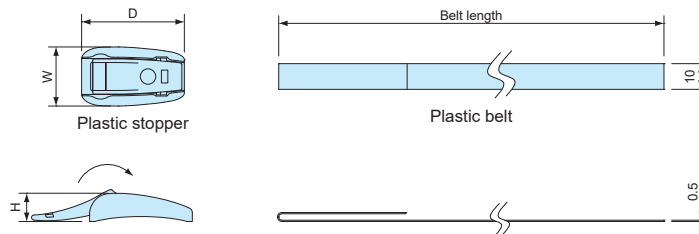
PKB-10S, 20S

- 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.

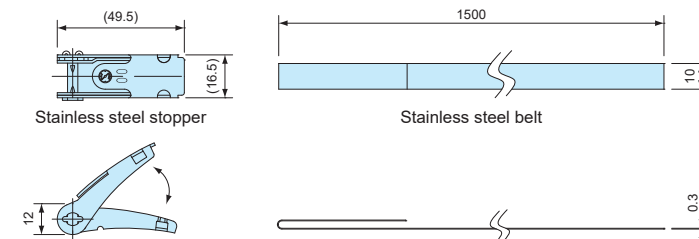
PKB dimensions

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

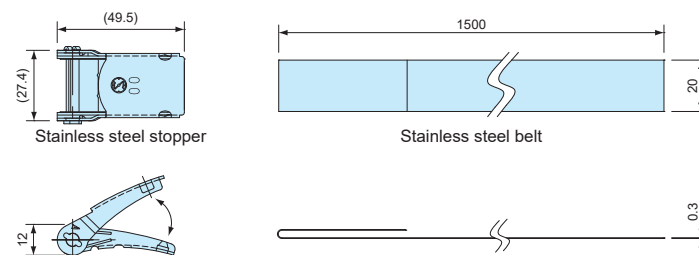
PKB-10PM, 10P



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

CVP series

VENTILATION PLUG



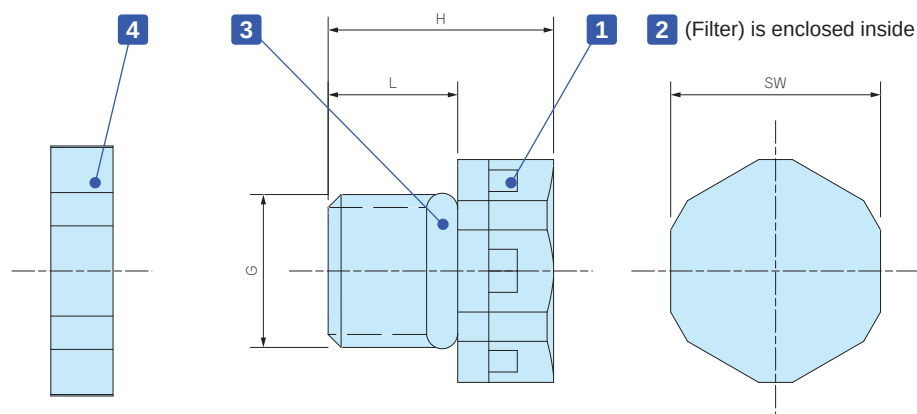
Pressure Equalization / Ventilation



- IP68 protection class rated (water depth 2 meters / 60 mins) yet highly affordable economical ventilation plug.
- Ventilation plug protects the enclosure from deformation by equalizing internal and external pressure differences, as well as venting the gas generated within the enclosure.
- 50 pcs value pack is available for CVP-6, 12 and 16 models.
- Recommended to be installed at the sides of the enclosure.

CVP dimensions

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



Components

■ PA = Polyamide

No.	Part name	Material
1	Housing	PA66 (UL94V-2)
2	Filter	PTFE
3	O-ring	Silicone
4	Lock nut	PA66 (UL94V-2)

Technical Data

Product no.	CVP-6W/B	CVP-12W/B	CVP-16W/B	CVP-24W/B
Airflow	600ml / min (dp = 7kPa)	1200ml / min (dp = 7kPa)	1600ml / min (dp = 7kPa)	1600ml / min (dp = 7kPa)
Certification	IP68 (1hours / 2m-depth)			
Operating temperature	-20°C ~ +80°C			

■ Airflow value listed is for reference only; check under actual usage conditions.

Product no. / Details

Product no.		G		SW	H	L	Pack of	Weight (g)
● Off-white	● Black	Thread size	Mount hole					
CVP- 6W	CVP- 6B	M 6 × P0.75	Φ 6.2	10	12.7	8.2	1	0.8
CVP-12W	CVP-12B	M12 × P1.5	Φ12.2	16.2	17.4	10	1	2.7
CVP-16W	CVP-16B	M16 × P1.5	Φ16.2	22	17	10.1	1	4.2
CVP-24W	CVP-24B	M24 × P1.5	Φ24.2	36	23.6	15	1	10.7
CVP- 6W-P	CVP- 6B-P	M 6 × P0.75	Φ 6.2	10	12.7	8.2	50	—
CVP-12W-P	CVP-12B-P	M12 × P1.5	Φ12.2	16.2	17.4	10	50	—
CVP-16W-P	CVP-16B-P	M16 × P1.5	Φ16.2	22	17	10.1	50	—

PMF-6B

SMALL PROTECTIVE VENT

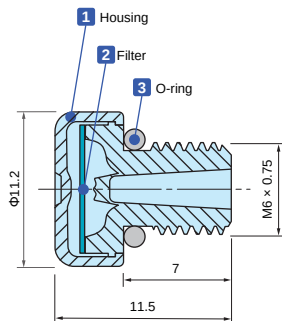
IP68



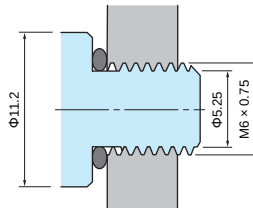
Application example

- 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.

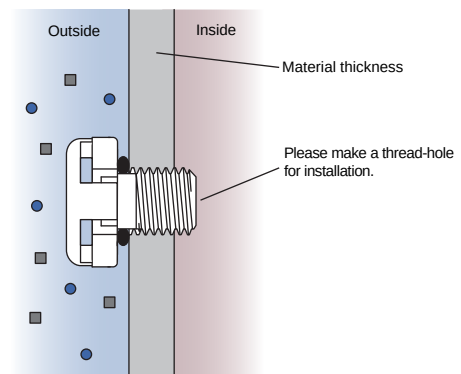
PMF-6B dimensions



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. / Details

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 series

PROTECTIVE VENT

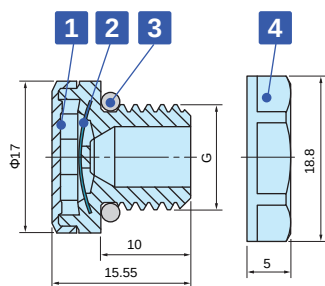
Pressure Equalization / Ventilation



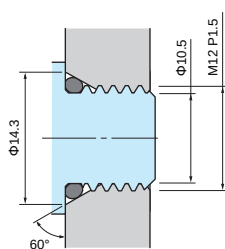
- Protective vent protects the enclosure from deformation by equalizing internal and external pressure differences, as well as venting the gas generated within the enclosure.
- IP68 protection class (water depth 2 meters / 60 mins) with an operating temperature range -40°C ~ +125°C allows them to be 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

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

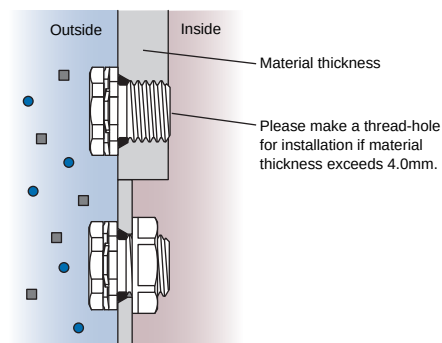


Hole milling drawings



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

Installation drawings



- 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) UL 94V-0 (Flame-resistant) • UL 746C f1	

Product no. / Details

Product no.		Material				G		Lock nut SW
● Light gray	● Black	1 Housing	2 Filter	3 O-ring	4 Lock nut	Thread size	Mount hole	
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

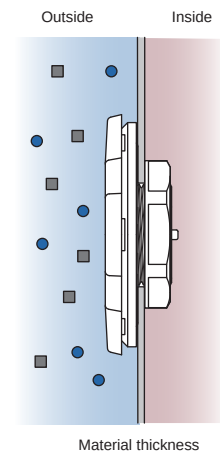
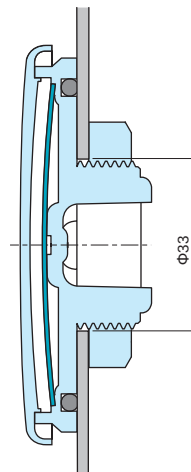
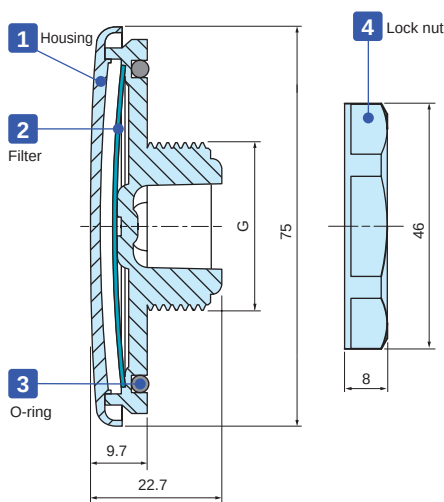
- Maintains exceptionally high airflow in extra-large enclosures with volumes of up to 200 liters in an outdoor environment.
- Protective vent protects the enclosure from deformation by equalizing internal and external pressure differences, as well as venting the gas generated within the enclosure.
- 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

CVP-M series

METAL VENTILATION PLUG



Pressure Equalization / Ventilation

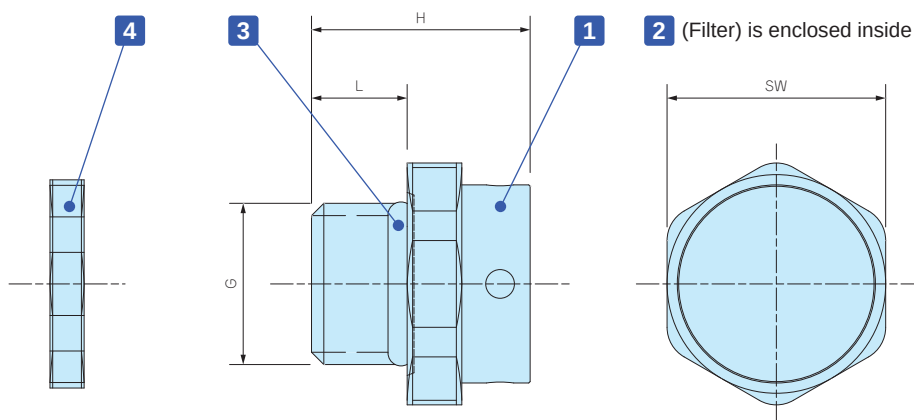
IP68



- High durability yet highly affordable economical metal ventilation plug.
- IP68 protection class rated (water depth 2 meters / 60 mins)
- Ventilation plug protects the enclosure from deformation by equalizing internal and external pressure differences, as well as venting the gas generated within the enclosure.
- Recommended to be installed at the sides of the enclosure.

CVP-M dimensions

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



Components

No.	Part name	Material
1	Housing	Brass / Nickel plated
2	Filter	PTFE
3	O-ring	Silicone
4	Lock nut	Brass / Nickel plated

Technical Data

Product no.	CVP-6M	CVP-12M	CVP-20M
Airflow	400ml / min (dp = 7kPa)	1200ml / min (dp = 7kPa)	1600ml / min (dp = 7kPa)
Certification	IP68 (1 hour / 2m depth)		
Operating temperature	-40°C ~ +100°C		

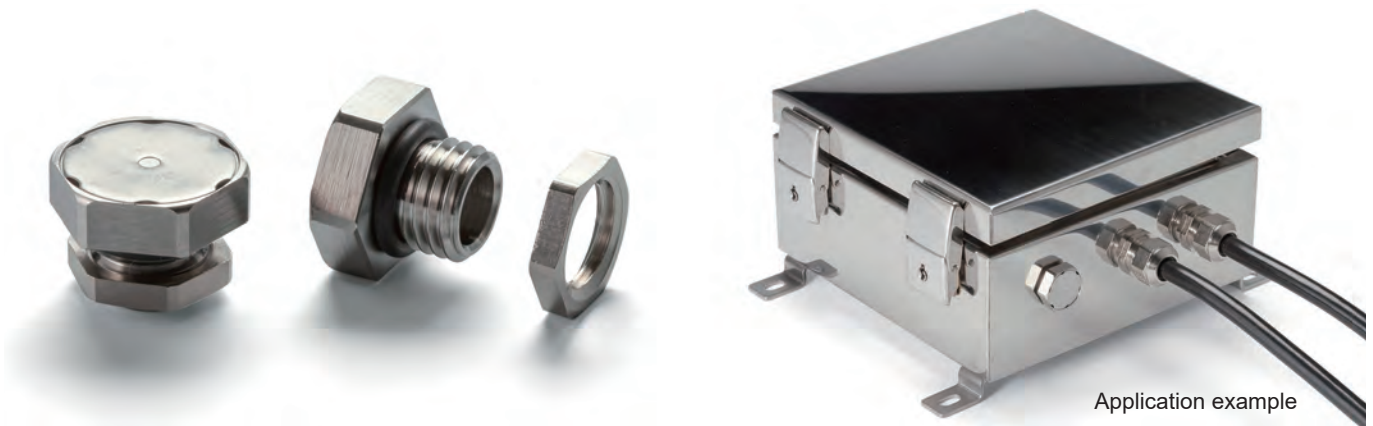
■ Airflow value listed is for reference only; check under actual usage conditions.

Product no. / Details

Product no.	G		SW	H	L	Weight (g)
● Silver	Thread size	Mount hole				
CVP- 6M	M 6 × P1	Φ 6.2	10	15	7	6.2
CVP-12M	M12 × P1.5	Φ12.2	16	16	7	14
CVP-20M	M20 × P1.5	Φ20.2	22	18.9	10	40.2

PMF-12M

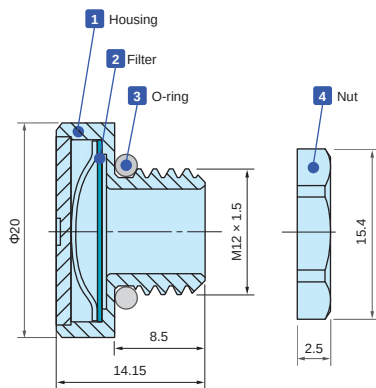
STAINLESS STEEL PROTECTIVE VENT



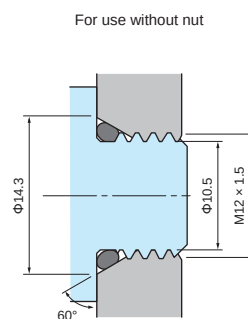
Application example

- 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

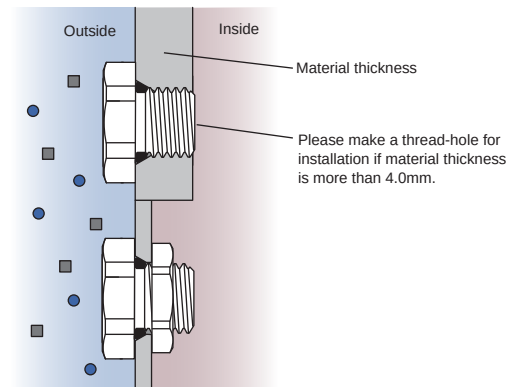


Hole milling drawings



- While Φ12.2mm 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

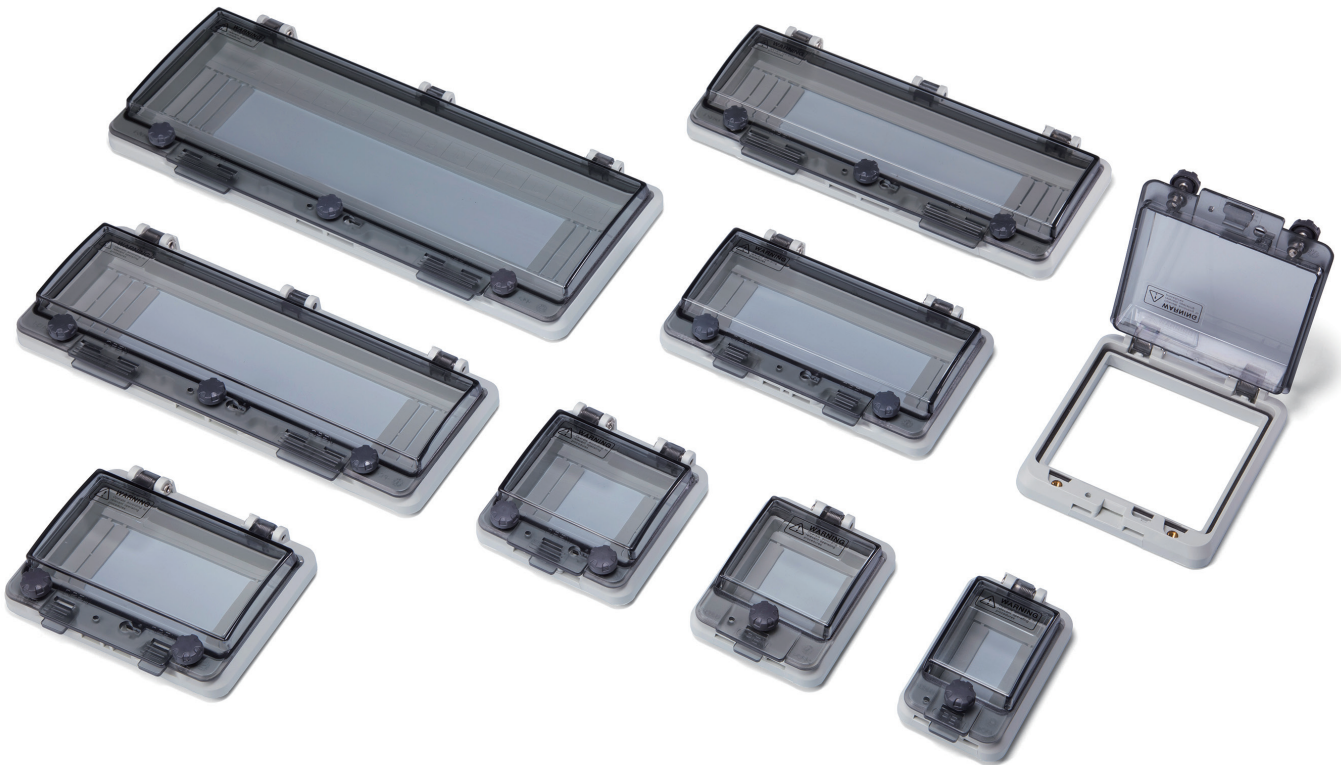
Airflow	1600ml / min (dp = 7 kPa)
Recommended Torque	0.6 ~ 1.2 N • m
Certifications	IEC60529 (Protection class test) : IP66 • IP67 • IP68 • IP69K IEC60068-2-1, 2, 14 (Heat resistance test) : -40°C ~ +125°C IEC60068-2-78 (Humidity test) : 85°C • 85% humidity • 1000 hours IEC60068-2-64 (Vibration test)

Product no. / Details

Product no.	Material				G		Nut SW
● Metallic	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	Φ12.2	15

IW series

HINGED INSPECTION WINDOW



Technical Data

Protection class : IP64
 IW0412B }
 IW0413B } IP54 Category 2*
 IW0416B } (*Prevents dust ingress with no negative pressure inside)
 IW0416A }
 Operating temperature : -20°C ~ +75°C
 Recommended torque to install : 1.1N · m ~ 1.5N · m
 Required panel thickness to install : 2.0 ~ 6.0mm

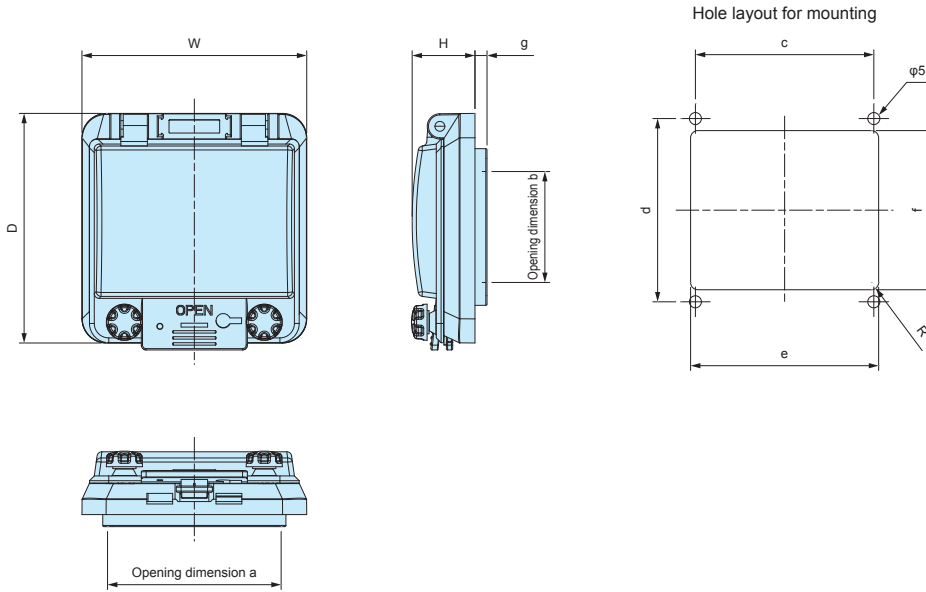
- IP64 water resistant see-through hinged inspection window.
- Smartly designed window for protection of switches and displays, etc.
Use in situations where component status, access and maintenance is necessary.
- Knurled thumb screws for easy securing.
- Be careful not to get fingers caught on the spring loaded self-closing cover.
- See TECHNICAL INFORMATION on our website for more information on the protection class IP rating.

Components

No.	Part name	Pcs	Material	Color / Finish
1	Cover	1	Polycarbonate UL94V-2	Smoke gray
2	Base	1	PC + ABS UL94V-0	Light gray
3	Gasket	2	Polyurethane	Black
4	Knurled thumb screw	1 / 2 / 3	PC + ABS • Stainless steel	Black • Unfinished
—	Screw	4 / 6 / 8	Steel	Zinc plated

IW dimensions

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



Product no. / Details

Product no.	W	D	H	a	b	c	d	e	f	g	Weight (g)
IW0402B	57.2	95.2	(26)	36	46	38	76	42	62	5	69
IW0403B	75.2	95.2	(26)	54	46	56	76	60	62	5	82
IW0404B	93.2	95.2	(26)	72	46	74	76	78	66	5	98
IW0405B	107.2	121.7	(31)	86.8	87.2	88	102	92	92	—	114
IW0406B	129.2	95.2	(26)	108	46	105	76	114	66	5	122.5
IW0408B	165.2	95.2	(26)	144	46	140	76	149	66	5	145
IW0412B	237.2	95.2	(26)	216	46	213	76	221	66	5	202
IW0413B	255.2	95.2	(26)	234	46	230	76	239	66	5	215
IW0416B	309.2	95.2	(26)	288	46	282	76	293	66	5	254
IW0416A	309.2	125.2	(26)	288	46	282	106	293	96	5	314

APPLICATION EXAMPLE

Circuit Breaker Cover



Connector Cover



Command Panel Cover

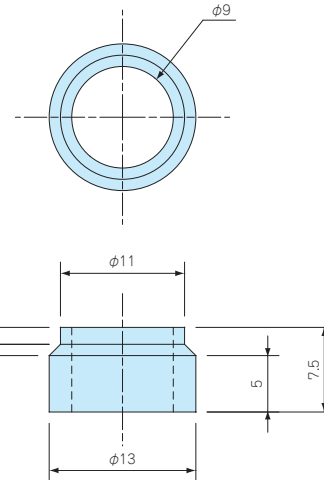


Switch Cover



RB-9

RUBBER BUSH



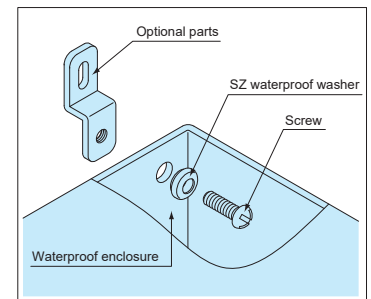
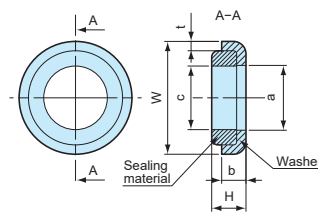
- Rubber bush for TMC series terminal junction box.
- Applicable for $\phi 8 \sim \phi 9$ mm diameter cable.

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).

Technical Data

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

- Shape of the sealing material vary by product.

Product no. / Details

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



IP67



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

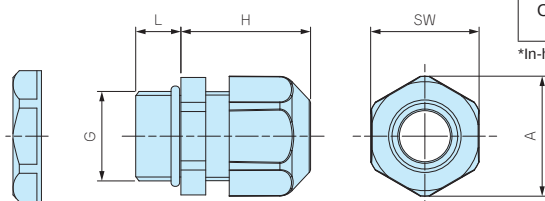
Components

■ 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 : Equivalent to IP67*
Operating temperature : -20°C ~ +80°C

*In-house test

Cap design varies by size



RMW40 or smaller



RMW50

- Lock nut is not included for RMW10S-6.

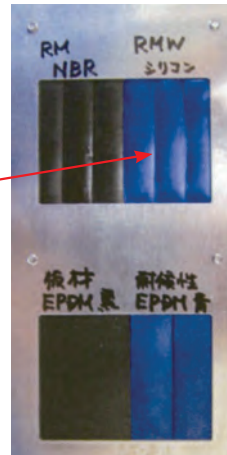
Please drill a proper thread hole into the enclosure for installation.

Product no. / Details

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	12	13.6	1
RMW8L-4B	RMW8L-4S	M8×1.25	Φ8.2	2.5	4	13	19.5	12	13.6	1
RMW10S-6B	RMW10S-6S	M10×1.5	—	3	6	8	20.5	13	14.6	1
RMW10L-6B	RMW10L-6S	M10×1.5	Φ10.2	3	6	13	20.5	13	14.6	1
RMW12S-7B	RMW12S-7S	M12×1.5	Φ12.2	3.5	7	9	20.5	16	17.7	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	19.2	21.3	1
RMW16L-8B	RMW16L-8S	M16×1.5	Φ16.2	4	8	15	24	19.2	21.3	1
RMW20S-12B	RMW20S-12S	M20×1.5	Φ20.2	6	12	10	29	24.3	26.8	1
RMW20L-12B	RMW20L-12S	M20×1.5	Φ20.2	6	12	15	28.5	24.3	26.8	1
RMW25L-17B	RMW25L-17S	M25×1.5	Φ25.2	11	17	15	35	33.3	36.8	1
RMW32L-21B	RMW32L-21S	M32×1.5	Φ32.3	13	21	15	38	36.1	39.8	1
RMW40L-27B	RMW40L-27S	M40×1.5	Φ40.3	18	27	18	43.5	46.1	51.2	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	14.6	100
RMW12S-7B-P	RMW12S-7S-P	M12×1.5	Φ12.2	3.5	7	9	20.5	16	17.7	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	19.2	21.3	100
RMW16L-8B-P	RMW16L-8S-P	M16×1.5	Φ16.2	4	8	15	24	19.2	21.3	100
RMW20S-12B-P	RMW20S-12S-P	M20×1.5	Φ20.2	6	12	10	29	24.3	26.8	100
RMW20L-12B-P	RMW20L-12S-P	M20×1.5	Φ20.2	6	12	15	28.5	24.3	26.8	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.



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)

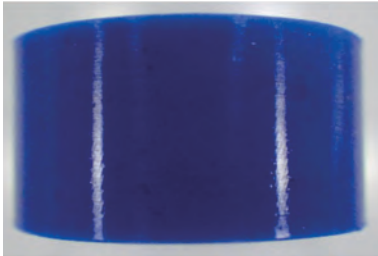
Time period :

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

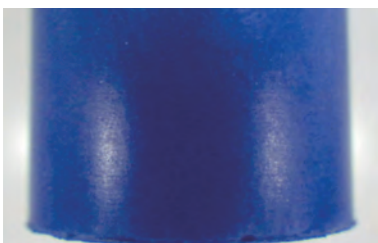


After

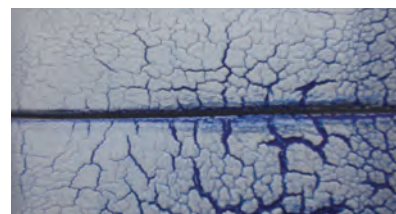


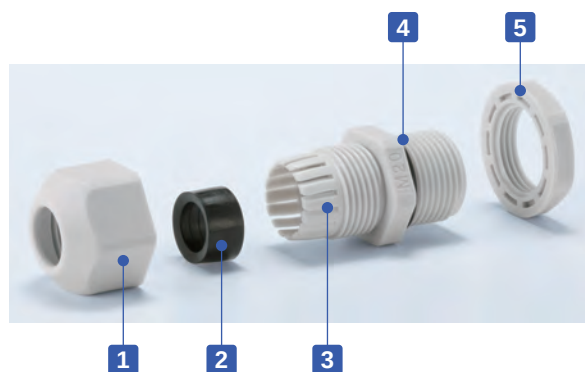
EPDM material from weatherproof cable gland of another manufacturer : Cracked, color drastically faded and powder appeared on the surface.

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.
- Protection class equivalent to IP67.

Technical Data

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

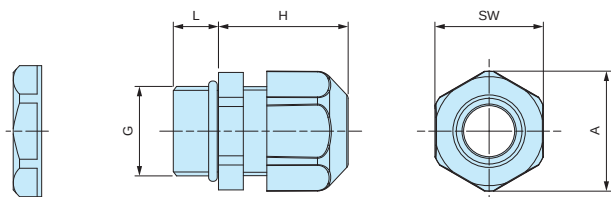
*In-house test

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.



- Lock nut is not included for RM8S-2.5, 8S-4, and 10S-6 models.

Please drill an appropriate thread hole into the enclosure for installation.

Cap design varies by size



Product no. / Details

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	12	13.6	1
RM8L-2.5B	RM8L-2.5S	M8×1.25	$\Phi 8.2$	1	2.5	13	19.5	12	13.6	1
RM8S-4B	RM8S-4S	M8×1.25	—	2.5	4	7.5	19.5	12	13.6	1
RM8L-4B	RM8L-4S	M8×1.25	$\Phi 8.2$	2.5	4	13	19.5	12	13.6	1
RM10S-6B	RM10S-6S	M10×1.5	—	3	6	8	20.5	13	14.6	1
RM10L-6B	RM10L-6S	M10×1.5	$\Phi 10.2$	3	6	13	20.5	13	14.6	1
RM12S-7B	RM12S-7S	M12×1.5	$\Phi 12.2$	3.5	7	9	20.5	16	17.7	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	19.2	21.3	1
RM16L-8B	RM16L-8S	M16×1.5	$\Phi 16.2$	4	8	15	24	19.2	21.3	1
RM20S-12B	RM20S-12S	M20×1.5	$\Phi 20.2$	6	12	10	29	24.3	26.8	1
RM20L-12B	RM20L-12S	M20×1.5	$\Phi 20.2$	6	12	15	28.5	24.3	26.8	1
RM25L-17B	RM25L-17S	M25×1.5	$\Phi 25.2$	11	17	15	35	33.3	36.8	1
RM32L-21B	RM32L-21S	M32×1.5	$\Phi 32.3$	13	21	15	38	36.1	39.8	1
RM40L-27B	RM40L-27S	M40×1.5	$\Phi 40.3$	18	27	18	43.5	46.1	51.2	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	14.6	100
RM12S-7B-P	RM12S-7S-P	M12×1.5	$\Phi 12.2$	3.5	7	9	20.5	16	17.7	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	19.2	21.3	100
RM16L-8B-P	RM16L-8S-P	M16×1.5	$\Phi 16.2$	4	8	15	24	19.2	21.3	100
RM20S-12B-P	RM20S-12S-P	M20×1.5	$\Phi 20.2$	6	12	10	29	24.3	26.8	100
RM20L-12B-P	RM20L-12S-P	M20×1.5	$\Phi 20.2$	6	12	15	28.5	24.3	26.8	100
RM25L-17B-P	RM25L-17S-P	M25×1.5	$\Phi 25.2$	11	17	15	35	33.3	36.8	100

RSP series

STRAIN RELIEF CABLE GLAND



- A total of 14 models available for selection.
- Strain relief cap protects cables by preventing it from bending beyond its limit and breaking.
- Economical price but high waterproofing capability equivalent to IP67.

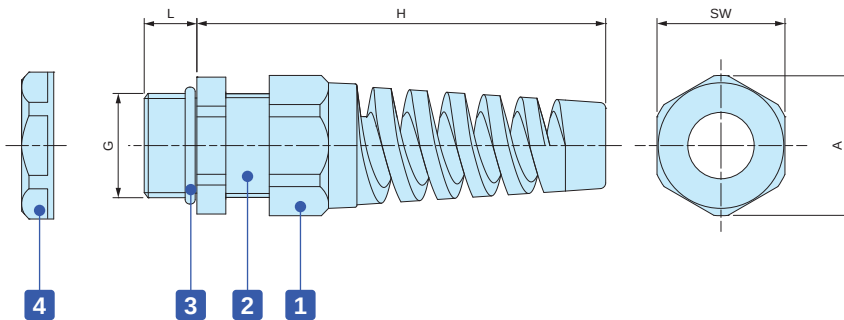
Technical Data

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

*In-house test

RSP dimensions

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



Components

■ PA = Polyamide

No.	Part name	Material
1	Strain 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. / Details

Product no.		G		Cable range		L	H	SW	A	Pack of
● Black	● Light gray	Thread size	Mounting hole	Min	Max					
RSP 8-2.5B	RSP 8-2.5S	M 8×1.25	Φ 8.2	1	2.5	10.5	48	12.1	13.8	1
RSP 8-4B	RSP 8-4S	M 8×1.25	Φ 8.2	2.5	4	10.5	48	12.1	13.8	1
RSP10-6B	RSP10-6S	M10×1.5	Φ10.2	3	6	12.2	54	13.1	14.5	1
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



- 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

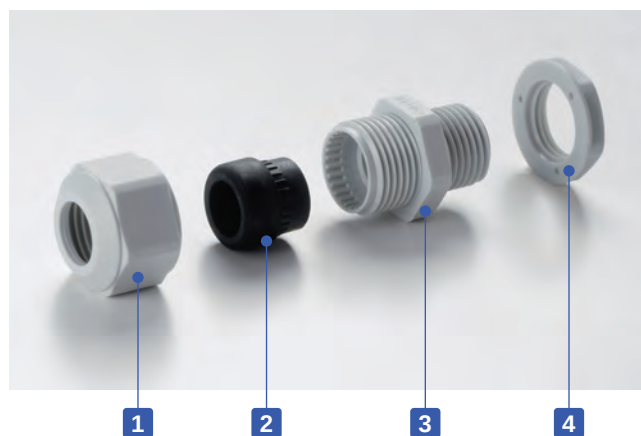
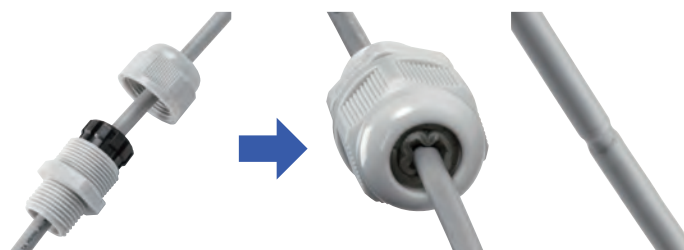
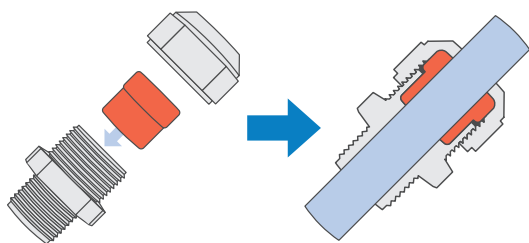
Protection class : IP68 1bar / 30min
 Operating temperature : -20°C ~ $+100^{\circ}\text{C}$
 Compliant with EN50262 Ver. A

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 an appropriate thread hole into the enclosure for installation.

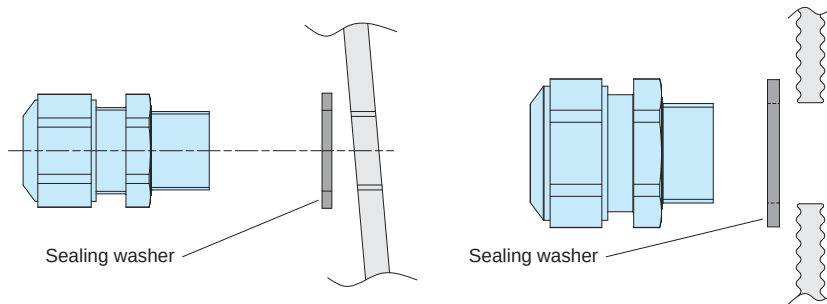
- Appropriate tightening torque varies by each cable diameter. Tighten the cap until top of the sealing insert forms a small bead between the cap and the cable.



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

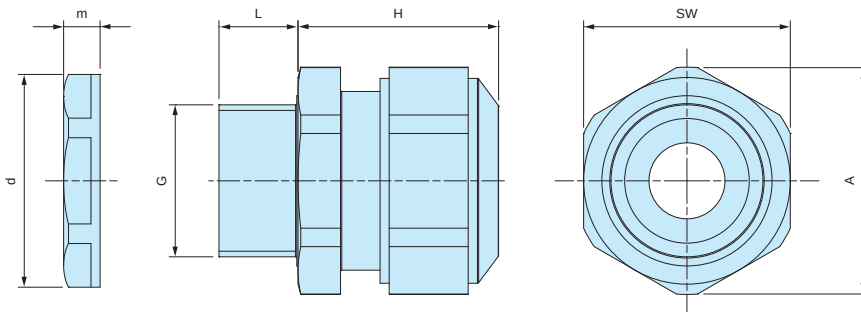
■ An optional sealing washer is required when installing on an uneven surface. (See website for more information on the optional sealing washer AGP series)

Waterproof rib



AG dimensions

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



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

Please drill an appropriate thread hole into the enclosure for installation.

Product no. / Details

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

RMH series

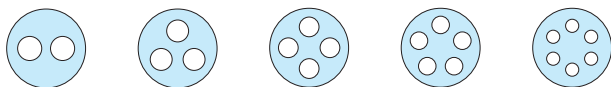
MULTI-HOLE CABLE GLAND



- Multihole cable gland with M threads.
- Multiple cables can be protected with single cable gland.
- Equivalent to IP65 protection class.
- Please use cables of the same diameter.



Up to a maximum of 6 cables can be protected with 1 cable gland.



Technical Data

Protection class : equivalent to IP65
Operating temperature : -20°C ~ +80°C

*In-house test

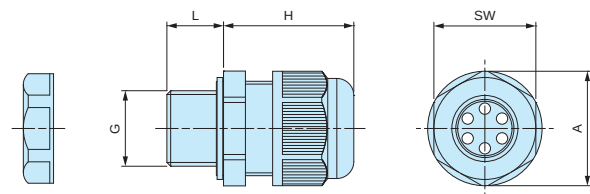
Components

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



RMH dimensions

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



Installation Examples

Product no. / Details

Product no.		G		Cable range		No. of holes	L	H	SW	A	Pack of
● Black	● Light gray	Thread size	Mounting hole	Min.	Max.						
RMH12-2B	RMH12-2S	M12×1.5	Φ12.2	2.5	3	2	9.4	26	18.9	21.2	1
RMH12-3B	RMH12-3S	M12×1.5	Φ12.2	2	2.5	3	9.4	26	18.9	21.2	1
RMH12-4B	RMH12-4S	M12×1.5	Φ12.2	2	2.5	4	9.4	26	18.9	21.2	1
RMH16-2B	RMH16-2S	M16×1.5	Φ16.2	3	4	2	15	29	22	24.7	1
RMH16-3B	RMH16-3S	M16×1.5	Φ16.2	3	4	3	15	29	22	24.7	1
RMH16-4B	RMH16-4S	M16×1.5	Φ16.2	2	3	4	15	29	22	24.7	1
RMH16-5B	RMH16-5S	M16×1.5	Φ16.2	2	2.5	5	15	29	22	24.7	1
RMH16-6B	RMH16-6S	M16×1.5	Φ16.2	1.5	2	6	15	29	22	24.7	1
RMH20-2B	RMH20-2S	M20×1.5	Φ20.2	4.5	6	2	15	34.5	27	30.3	1
RMH20-3B	RMH20-3S	M20×1.5	Φ20.2	4	5	3	15	34.5	27	30.3	1
RMH20-4B	RMH20-4S	M20×1.5	Φ20.2	4	4.5	4	15	34.5	27	30.3	1
RMH20-5B	RMH20-5S	M20×1.5	Φ20.2	3	4	5	15	34.5	27	30.3	1
RMH20-6B	RMH20-6S	M20×1.5	Φ20.2	2	3	6	15	34.5	27	30.3	1
RMH25-2B	RMH25-2S	M25×1.5	Φ25.2	6	8	2	15	37.5	33	37	1
RMH25-3B	RMH25-3S	M25×1.5	Φ25.2	5	7	3	15	37.5	33	37	1
RMH25-4B	RMH25-4S	M25×1.5	Φ25.2	4	6	4	15	37.5	33	37	1
RMH25-5B	RMH25-5S	M25×1.5	Φ25.2	4.5	5.5	5	15	37.5	33	37	1
RMH25-6B	RMH25-6S	M25×1.5	Φ25.2	3	4.5	6	15	37.5	33	37	1
RMH32-2B	RMH32-2S	M32×1.5	Φ32.3	8.5	11	2	15	44	42	46.5	1
RMH32-3B	RMH32-3S	M32×1.5	Φ32.3	9	10	3	15	44	42	46.5	1
RMH32-4B	RMH32-4S	M32×1.5	Φ32.3	8	9	4	15	44	42	46.5	1
RMH32-5B	RMH32-5S	M32×1.5	Φ32.3	6	8	5	15	44	42	46.5	1
RMH32-6B	RMH32-6S	M32×1.5	Φ32.3	5.5	7	6	15	44	42	46.5	1

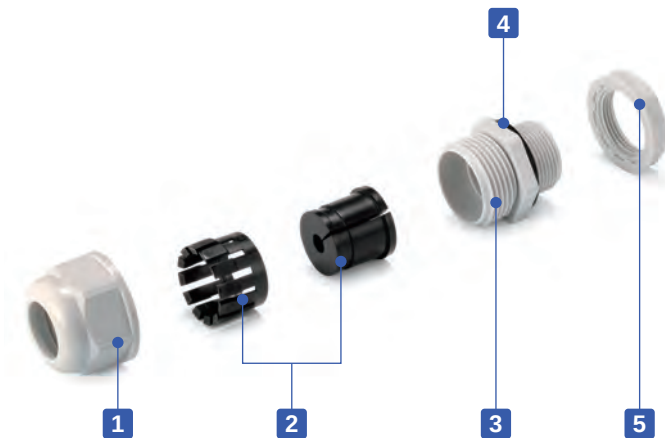


- Split type sealing insert can protect cables with connector.

Technical Data

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

*In-house test

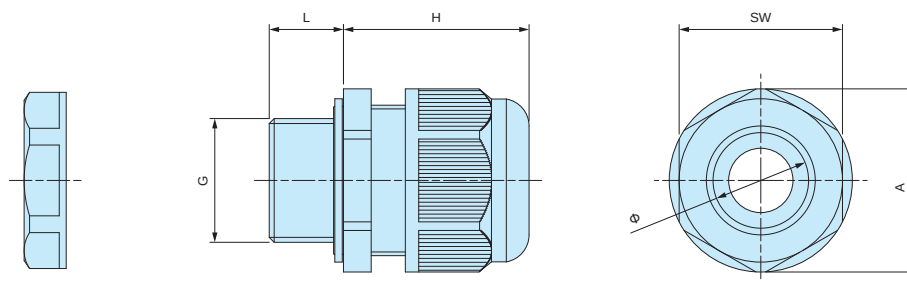


Components

No.	Part name	Material
1	Cap	PA66 (UL94V-2)
2	Sealing Insert	Silicone / PA66 (UL94V-2)
3	Connector	PA66 (UL94V-2)
4	Sealing Washer	Silicone
5	Lock Nut	PA66 (UL94V-2)

RSC dimensions

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



Product no. / Details

Product no.		G		Cable range		L	H Max	SW	A	Φ	Pack of
● Black	● Light gray	Thread size	Mounting hole	Min	Max						
RSC25-6.5B	RSC25-6.5S	M25×1.5	Φ25.2	5	6.5	15	37.5	33	37	19	1
RSC25-10.5B	RSC25-10.5S	M25×1.5	Φ25.2	7.5	10.5	15	37.5	33	37	19	1
RSC32-6.5B	RSC32-6.5S	M32×1.5	Φ32.3	5	6.5	15	44	42	46.5	25	1
RSC32-10.5B	RSC32-10.5S	M32×1.5	Φ32.3	7.5	10.5	15	44	42	46.5	25	1



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

Technical Data

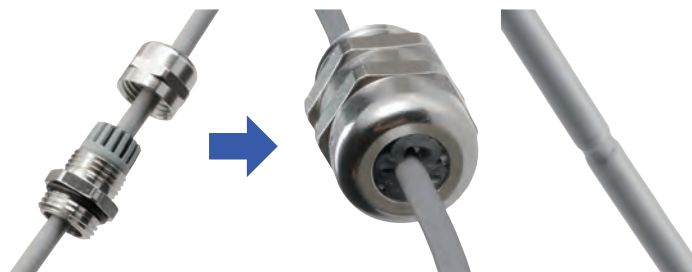
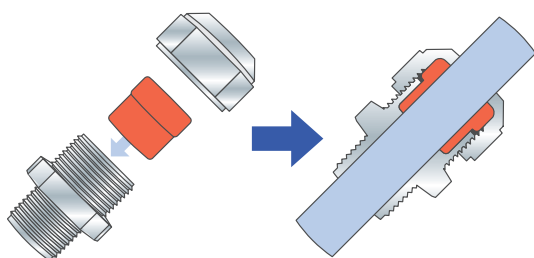
Protection class : IP68 1bar / 30min
 Operating temperature : -40°C ~ +100°C
 Compliant with EN50262 Ver. A

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.



- Appropriate 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.

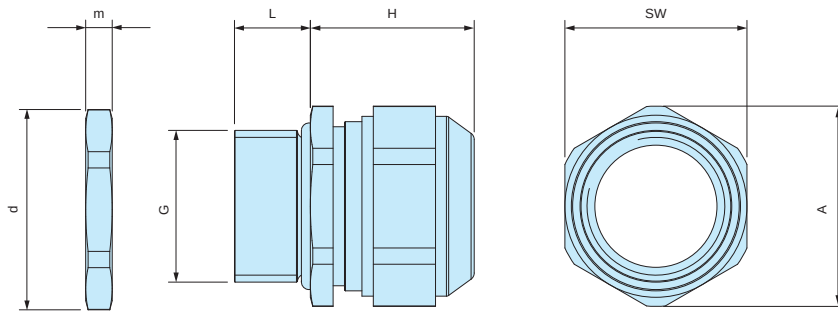


Components

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. / Details

Product no.	G		Cable range		L	H Max	SW	A	d	m	Pack of
	Thread size	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



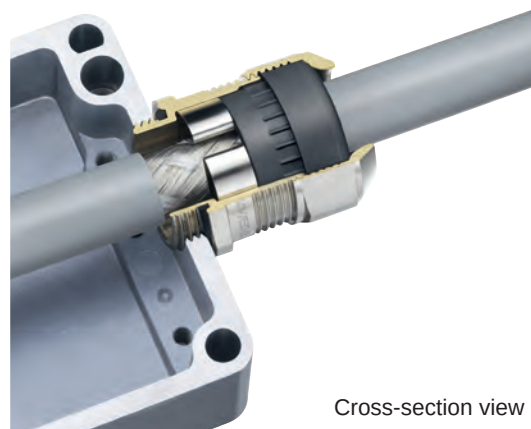
- Optimal contact spring provides excellent shield contact and the smallest possible transfer impedance.
- Clawed lock nut makes a good EMC shield contact possible on conductive enclosures.
- Shape of the contact spring not only allows for a large clamping range to the shield but also enables easy and 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
 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



Cross-section view

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



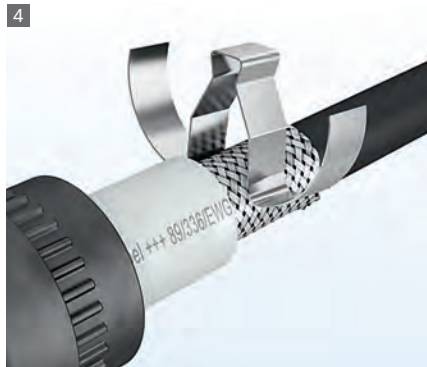
Remove the contact spring from the connector.



Install the connector onto the enclosure.



Strip the cable.



Clip the contact spring on the shielded cable.



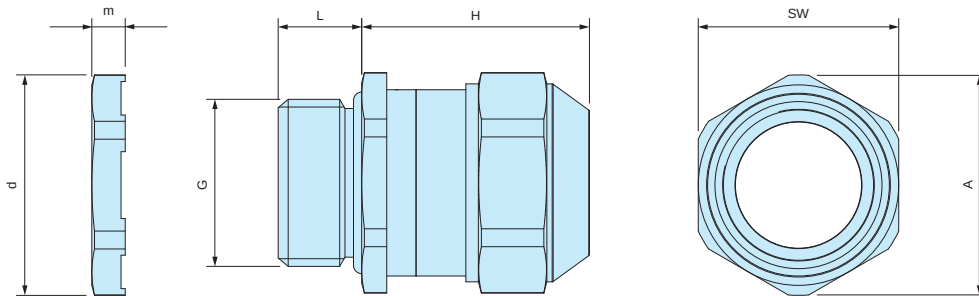
Pass the cable through the sealing insert and cap.



Tighten the cap to complete.

AGE dimensions

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



Product no. / Details

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



- Economical metal cable gland.
- Equivalent to IP67 protection class.
- Wide selection available from M12 ~ M32.

Technical Data

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

*In-house test

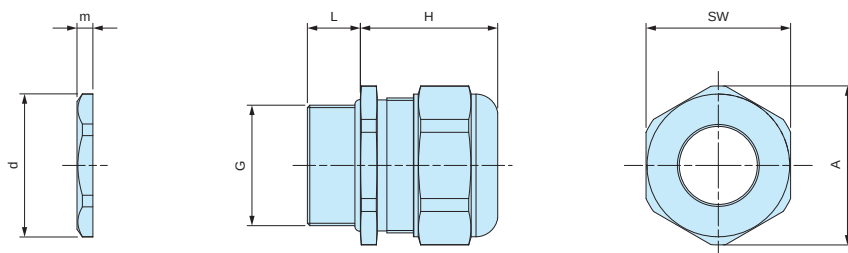


Components

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

RMC dimensions

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



Product no. / Details

Product no.	G		Cable range		L	H Max	SW	A	d	m	Pack of
	Thread size	Mounting hole	Min	Max							
RMC12-6.5	M12×1.5	Φ12.2	5	6.5	10	18	15	16.5	15.4	2.5	1
RMC12-7.5	M12×1.5	Φ12.2	6.5	7.5	10	18	15	16.5	15.4	2.5	1
RMC16-8	M16×1.5	Φ16.2	6.5	8	10	23	18	19.7	19.7	2.8	1
RMC16-10.5	M16×1.5	Φ16.2	8	10.5	10	23	18	19.7	19.7	2.8	1
RMC20-11	M20×1.5	Φ20.2	9.5	11	10	23.5	24	26.4	24.2	3.2	1
RMC20-14.5	M20×1.5	Φ20.2	11	14.5	10	23.5	24	26.4	24.2	3.2	1
RMC25-16	M25×1.5	Φ25.2	14	16	11	28.5	30	33	29.7	3.3	1
RMC25-19	M25×1.5	Φ25.2	16	19	11	28.5	30	33	29.7	3.3	1
RMC32-21	M32×1.5	Φ32.3	18	21	13	30.5	36	39.6	37.4	3.5	1
RMC32-25.5	M32×1.5	Φ32.3	21	25.5	13	30.5	36	39.6	37.4	3.5	1



- L-shape cable gland with M type threads.
- Allow wires to be routed vertically.
- Equivalent to IP67 protection class.

Technical Data

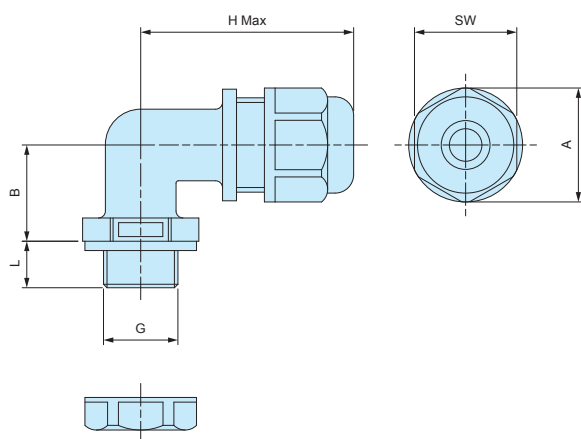
Protection class : Equivalent to IP67*
Operating temperature : -20°C ~ +80°C

*In-house test

Components

No.	Part name	Material
1	Cap	PA66
2	Sealing Insert	NBR/PA66
3	Connector	PA66
4	O-ring	NBR
5	Lock Nut	PA66

REL dimensions



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

Installation example



Product no. / Details

Product no.	G		Cable range		H Max	L	SW	A	B	Pack of
	Thread size	Mounting hole	Min	Max						
● Black										
REL16- 7B	M16×1.5	Φ16.1	5	7	45.8	10	22	24.5	20.7	1
REL16-10B	M16×1.5	Φ16.1	8	10	45.8	10	22	24.5	20.7	1
REL20-11B	M20×1.5	Φ20.1	7	11	52.4	15	27.3	30.8	24.9	1
REL20-14B	M20×1.5	Φ20.1	11	14	52.4	15	27.3	30.8	24.9	1
REL25-16B	M25×1.5	Φ25.1	12	16	58	15	33.2	36.8	29.5	1
REL25-18B	M25×1.5	Φ25.1	15	18	58	15	33.2	36.8	29.5	1
REL32-22B	M32×1.5	Φ32.1	18	22	70	15	41	45.7	33.9	1

THA45 series

IP68 SEAMLESS CABLE GLAND

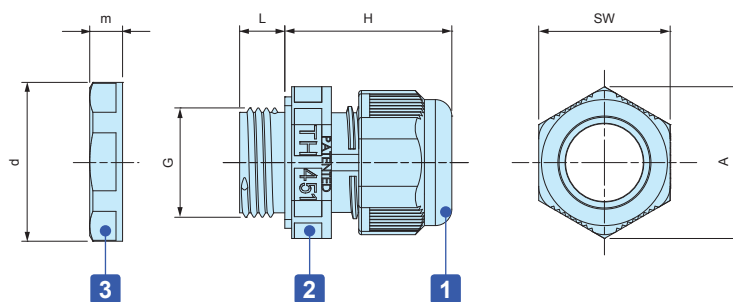
IP68



Seamless construction of connector and sealing insert for superb waterproof performance.



THA45 dimensions



Technical Data

Protection class : IP68 5bar/1h (1 hour / 50m depth)
Operating temperature : -40°C ~ +125°C
EN50262 VarA compliant

Color

Code	[L] Light gray / Gray	[B] Black / Gray	[G] Black / Green
Color			

Components

■ PA66 = Polyamide 66
■ PA66GF = Glass fiber filled polyamide 66

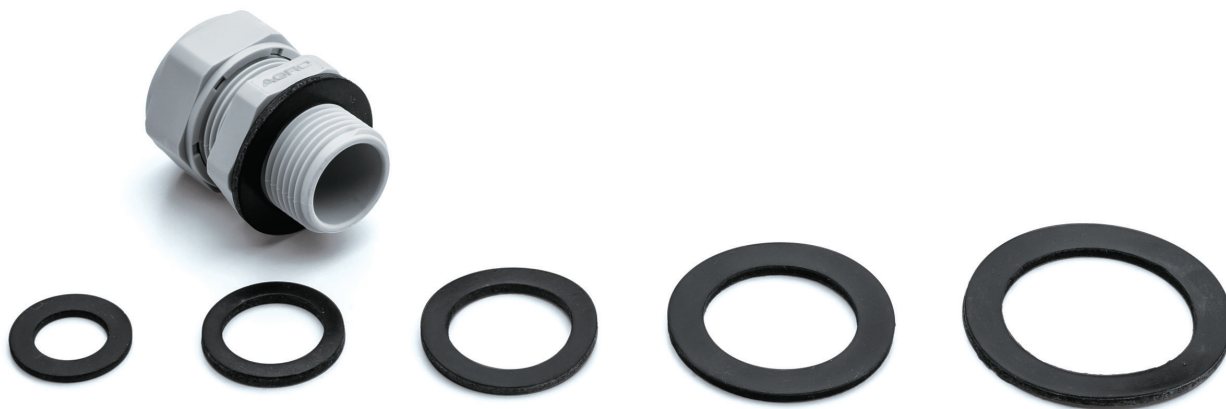
No.	Part name	Material
1	Cap	*PA66 • PA66GF
2	Connector	PA66 • TPE
3	Lock nut	PA66

*PA66 material for THA452-25 models.

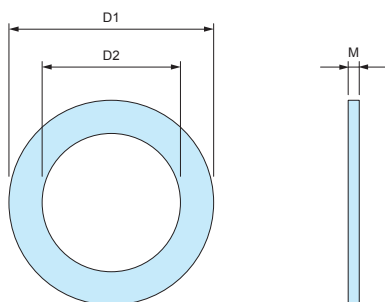
Product no. / Details

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

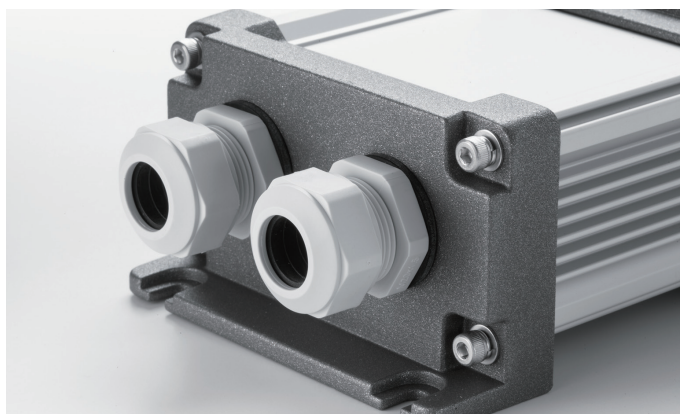
Product no.	G			Cable range		L	H Max	SW	A	d	m	Pack of
	Thread size	Thread diameter	Mounting hole	Max	Min							
THA450-16S□	M16×1.5	15.3	Φ15.7	5	7.5	8	29.5	19	21.6	24	5	1
THA450-16L□	M16×1.5	15.3	Φ15.7	7.5	9.5	8	29.5	19	21.6	24	5	1
THA451-20□	M20×1.5	20	Φ20.2	10.5	14	8	31	24	26.3	26.5	7	1
THA451-20-2□	M20×1.5	20	Φ20.2	Φ6×2		8	31	24	26.3	26.5	7	1
THA452-25□	M25×1.5	25	Φ25.2	14	17	8	34	29	32	35.2	6	1

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

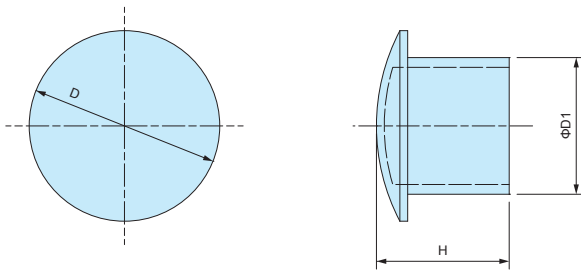
- Sealing washer for AG series.
- Made from oil resistant NBR material.
- Use in the case of installation on a rough or uneven surfaces.
- Selectable in 7 sizes (from M12 to M50)
- Sealing washer is not necessary for installation on flat surfaces.

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

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

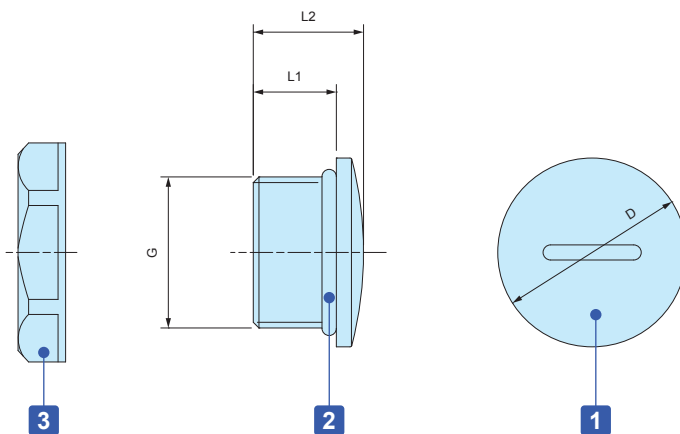
Product no.	D	D1	H	Suitable cable glands	Pack of
SP-12	10.2	6	15.5	RMW12, RM12, RMW16, RM16, RPG7, RPG9	10
SP-16	15.6	9.5	15.5	RMW20, RM20, RPG11, RPG13.5	10
SP-20	19.6	13.5	16.5	RPG16	10
SP-25	24.4	17.5	17	RMW25, RM25, RMW32, RM32, RPG21	5
SP-40	32.5	24.5	17.5	RMW40, RM40, RPG29	5
SP-50	47.2	38.9	17.6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

SHP series**BLIND PLUG with O-ring**

IP67



- A hole plug for sealing holes that are not in use.
- IP67 rating is achieved through the use of a lock nut.
- Waterproofing is not guaranteed when directly secured through thread holes.

SHP dimensions

A gloss-like finish distinctive to injection molded products may be visible in certain areas of the black color type. This does not affect the performance of the product.

Components

■ PA = Polyamide

No.	Part name	Material
1	Housing	PA66 (UL94V-2)
2	O-ring	NBR
3	Lock nut	PA66 (UL94V-2)

Product no. / Details

Product no.		G		D	L1	L2	Pack of
● Black	● Light gray	Thread size	Mounting hole				
SHP-12B	SHP-12S	M12×1.5	Φ12.2	Φ16	9	12.2	1
SHP-16B	SHP-16S	M16×1.5	Φ16.2	Φ20	9	12.2	1
SHP-20B	SHP-20S	M20×1.5	Φ20.2	Φ25	11	14.6	1
SHP-25B	SHP-25S	M25×1.5	Φ25.2	Φ30	11	14.5	1
SHP-32B	SHP-32S	M32×1.5	Φ32.3	Φ38	11	15	1
SHP-40B	SHP-40S	M40×1.5	Φ40.3	Φ46	12	16	1



- Torque wrench with interchangeable head.
- Suitable for the tightening of cable glands requiring a specific torque.
- Open end interchangeable head (spanner head) TWE series available separately.
- Spanner head is not included.

Product no. / Details

Product no.	Length	Torque range (N · m)	Increments (N · m)
TWH0.5-5	215	0.5 ~ 5.0	0.05

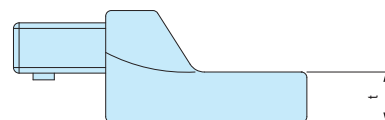
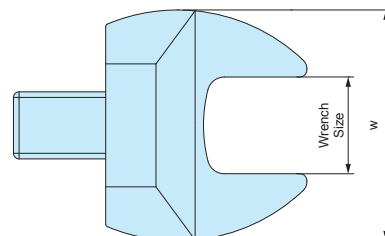
Notes

The torque wrench is not subject to RoHS regulations.

Since it is an OEM product and not a JIS-compliant product, no calibration services or inspection reports, etc. are provided.

When tightening, proceed first with a low value (half of the reference) of the recommended torque, and set the appropriate tightening torque for the cable and mounting part that will be tightened thereafter.

Please read the operation manual (refer to TAKACHI website) before use to ensure correct and safe usage of the product.



- Dedicated open end interchangeable head for TWH series.
- Various interchangeable heads are available to fit a range of cable gland sizes.

Product no. / Details

Product no.	Wrench size	w	t
TWE- 8	8	27	6
TWE- 9	9	27	6
TWE-11	11	27	6
TWE-12	12	30	6
TWE-13	13	31	6
TWE-15	15	40	9
TWE-16	16	40	9
TWE-17	17	41	9
TWE-18	18	42	9
TWE-19	19	42	10
TWE-21	21	47	10

Product no.	Wrench size	w	t
TWE-22	22	52	10
TWE-23	23	53	11
TWE-24	24	55	11
TWE-27	27	58	13
TWE-29	29	58	13
TWE-30	30	65	14
TWE-32	32	65	14
TWE-33	33	65	14
TWE-34	34	70	15
TWE-36	36	72	15

Note: These open end head is not subject to RoHS regulations.

Suitable TWE model

RM • RMW series

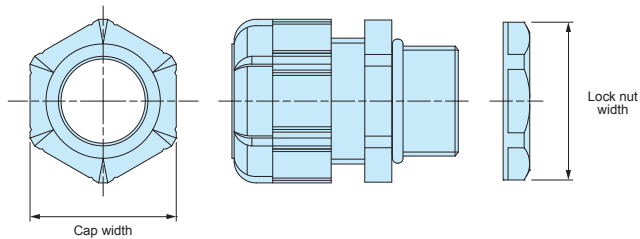
Product no.	Cap width	Suitable model	Lock nut width	Suitable model
RM8S-2.5	11.8	TWE-12	–	n/a
RM • RMW8L-2.5	11.8	TWE-12	12.6	TWE-13
RM8S-4	11.8	TWE-12	–	n/a
RM • RMW8L-4	11.8	TWE-12	12.6	TWE-13
RM • RMW10S-6	13	TWE-13	–	n/a
RM • RMW10L-6	13	TWE-13	14.8	TWE-15
RM • RMW12S-7	16	TWE-16	17	TWE-17
RM • RMW12L-7	16	TWE-16	17	TWE-17
RM • RMW16S-8	19	TWE-19	22	TWE-22
RM • RMW16L-8	19	TWE-19	22	TWE-22
RM • RMW20S-12	24	TWE-24	26.2	n/a
RM • RMW20L-12	24	TWE-24	26.2	n/a
RM • RMW25L-17	33	TWE-33	32.6	n/a
RM • RMW32L-21	36	TWE-36	40.3	n/a
RM • RMW40L-27	45.7	n/a	51	n/a
RM • RMW50L-38	60	n/a	61.2	n/a
RM63L-44	68	n/a	73.4	n/a

RPG series

Product no.	Cap width	Suitable model	Lock nut width	Suitable model
RPG7-7	16	TWE-16	18.7	TWE-19
RPG9-8	19	TWE-19	21.8	TWE-22
RPG11-10	22	TWE-22	23.7	TWE-24
RPG13.5-11	24	TWE-24	27	TWE-27
RPG16-14	26.7	TWE-27	29.8	TWE-30
RPG21-18	33	n/a	35.8	TWE-36
RPG29-25	42	n/a	45.8	n/a

RSP series

Product no.	Cap width	Suitable model	Lock nut width	Suitable model
RSP12-6	16	TWE-16	17	TWE-17
RSP16-8	19.5	n/a	22	TWE-22
RSP20-11	24	TWE-24	26.2	n/a
RSP25-16	33	TWE-33	32.6	n/a



Note 1) ""n/a"" indicates no suitable spanner head size and torque value available.

Note 2) Dimensions of Cap and Lock nut width are in mm.

AG series

Product no.	Cap width	Suitable model	Lock nut width	Suitable model
AG8-3.5	12	TWE-12	–	n/a
AG8-5	12	TWE-12	–	n/a
AG10-6	15	TWE-15	–	n/a
AG12-5	17	TWE-17	17	TWE-17
AG12-6.5	17	TWE-17	17	TWE-17
AG12-8	17	TWE-17	17	TWE-17
AG16-10	21	TWE-21	22	TWE-22
AG20-15	27	TWE-27	27	TWE-27
AG25-16	34	TWE-34	33	TWE-33
AG25-20	34	TWE-34	33	TWE-33
AG32-25.5	41	n/a	42	n/a
AG40-28.5	50	n/a	48	n/a
AG40-33	50	n/a	48	n/a
AG50-37	60	n/a	59	n/a
AG50-42	60	n/a	59	n/a

AGM series

Product no.	Cap width	Suitable model	Lock nut width	Suitable model
AGM6-2.5	8	TWE-8	9	TWE- 9
AGM6-3	8	TWE-8	9	TWE- 9
AGM6-3.5	8	TWE-8	9	TWE- 9
AGM8-5	11	TWE-11	11	TWE-11
AGM10-6	13	TWE-13	13	TWE-13
AGM12-8	15	TWE-15	15	TWE-15
AGM16-10.5	18	TWE-18	19	TWE-19
AGM20-15	24	TWE-24	24	TWE-24
AGM25-20	30	TWE-30	30	TWE-30
AGM32-25.5	36	TWE-36	36	TWE-36
AGM40-28.5	46	n/a	51	n/a
AGM40-33	46	n/a	51	n/a
AGM50-37	55	n/a	60	n/a
AGM50-42	55	n/a	60	n/a

AGE series

Product no.	Cap width	Suitable model	Lock nut width	Suitable model
AGE12-5	15	TWE-15	15	TWE-15
AGE12-6.5	15	TWE-15	15	TWE-15
AGE16-10.5	18	TWE-18	19	TWE-19
AGE20-15	24	TWE-24	24	TWE-24
AGE25-20	30	TWE-30	30	TWE-30
AGE32-25	36	n/a	36	n/a

AGH series

Product no.	Cap width	Suitable model	Lock nut width	Suitable model
AGH10-6	13	TWE-13	13	TWE-13
AGH12-8	15	TWE-15	15	TWE-15
AGH16-10.5	18	TWE-18	19	TWE-19
AGH20-15	24	TWE-24	24	TWE-24
AGH25-20	30	TWE-30	30	TWE-30
AGH32-25.5	36	TWE-36	36	TWE-36

TWH0.5-5 Torque Wrench Operation Manual

1 For Safety Use

Safety Precautions

Please read this manual carefully before use while following operation instructions.

The manufacturer / retailer etc. will not be are not liable for any personal injuries, damage to the product, or other property damage, etc. caused by improper use.

Warnings



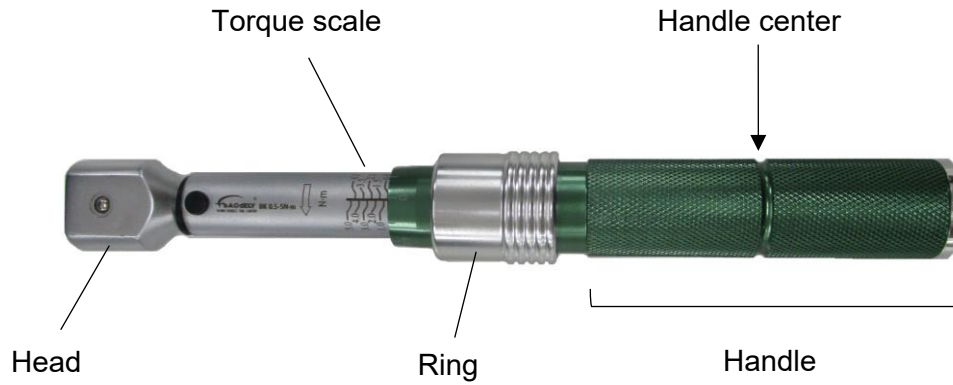
- Do not use beyond the maximum torque value. This may cause damage and injury.
- Do not use the torque wrench as a hammer or lever, or applying strong impact.
- Do not modify or disassemble the torque wrench. These may cause strength or accuracy problems, which may lead to accidents and injuries.
- Before use, check for damage, cracks, rust, or deformation. These may cause damage and injury.
- Do not use the torque wrench to loosen nuts or caps as it is a precision instrument.
- Do not operate the torque wrench with oily or greasy hands. This may cause your hands to slip while tightening, leading to accidents or injuries.
- Wear safety glasses or other eye protection while using.
- Be careful not to hit your hands or elbows on surrounding objects when working with a torque wrench.
- Do not use the torque wrench underwater or in the sea.
- When working on elevated platforms, take measures to prevent torque wrenches from falling.

Cautions



- Set the torque before each use.
- Do not lower the scale below the minimum.
- Do not use it outside of the torque scale range.
- Every time before setting the torque, ensure that the handle lock is in the unlock position first before rotating the handle.
- Grip the center of the handle to tighten. Gripping the edge of the handle may cause incorrect torque value.
- Tighten slowly while applying minimal force. Otherwise applied torque value may be incorrect.
- Stop tightening after hearing, or feeling a clicking sound or sensation. Further tightening may result in overtorque.
- Do not use parts such as a pipe to extend the handle.
- Do not drop the torque wrench or apply strong impact.
- Do not use in high temperature and humid environments.
- After use, set the torque wrench to the minimum value.
- After use, remove dirt, dust, mud, oil, water, etc. before storing.
- Store in a dry place when not in use for an extended period of time.

2 Components



3 How to use

① Push and hold the ring down to unlock.	② Turn the handle.
 A blue arrow points downwards towards the green adjustment ring, indicating it should be pushed down.	 Two blue curved arrows indicate the handle should be rotated. Text: · Turn the handle while the ring is in the unlock position.
③ Adjust to required torque.	④ Release the ring.
 A red arrow points to the green ring, which is being rotated to align the '0' mark on the scale with the 'N·m' label. The scale has markings from 1.0 to 5.0.	 A blue arrow points upwards from the green ring, indicating it should be released. Text: · The ring will spring back to its original (lock) position.

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