

MULTI-FUNCTION EXTRUDED ALUMINIUM CASE EXPT • EXP • EXPE • EXW • EXPF • EXEF • EXWF series

The following series, by utilizing similar extrusion frames, are available in 7 different types, such as having IP65, or EMC shielded functions, among others.

73 different sizes are available for each version.

CORNER GUARD

EXP series Page 203 ~ 204



FLANGED

EXPF series Page 209 ~ 210



IP65 CORNER GUARD

EXW series Page 207 ~ 208



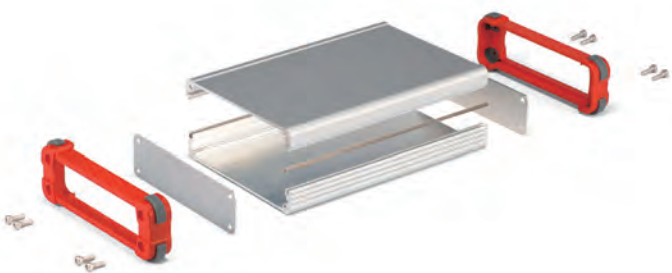
IP65 FLANGED

EXWF series Page 213 ~ 214



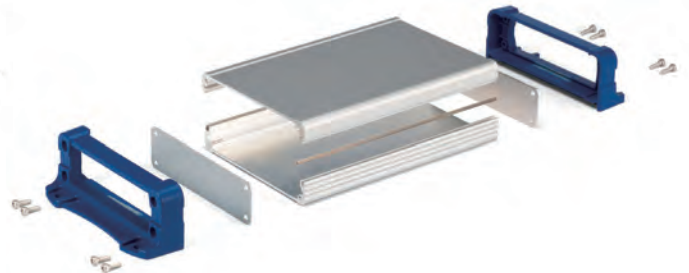
EMC CORNER GUARD

EXPE series Page 205 ~ 206



EMC FLANGED

EXEF series Page 211 ~ 212



WITH TILT LEG

EXPT series Page 201 ~ 202



Custom length available in 1mm intervals



16 COLOR COMBINATIONS

EXP series is available in 2 different body frame and 8 different exterior frame colors for a total of 16 different color types.



APPLICATION EXAMPLE

Measuring Instrument



Accessories (Optional parts)
Tilt leg TLW series
See page 222

Network / Communication Box



Controller



Ultrasonic Thickness Gauge



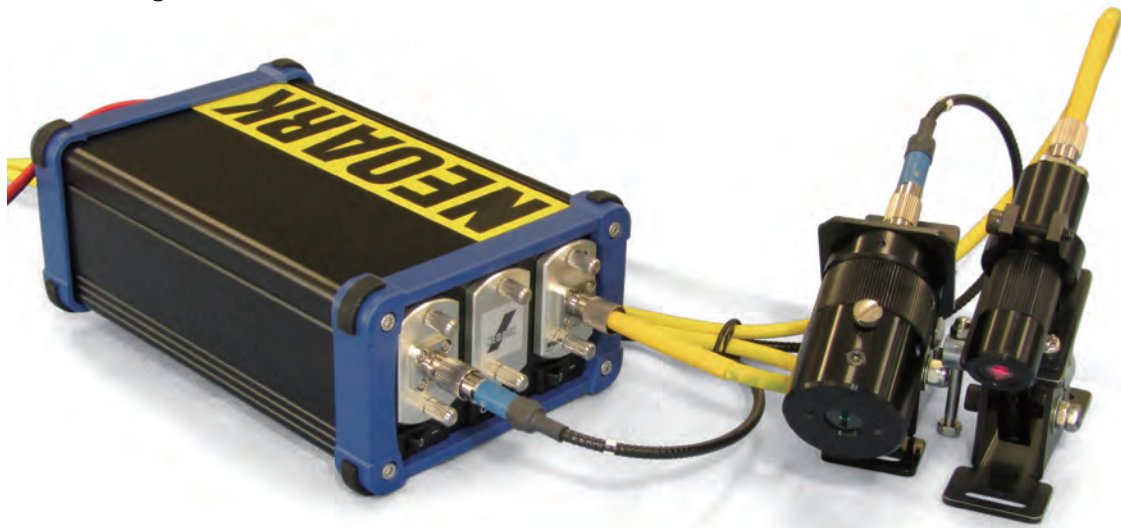
Radio Communication Tester



Tank Gauging System Interface Unit



Fiber Laser Projector



Desktop Load Cell Amplifier



Magnet Elongation Measurement System



Peristaltic DC Pump



Multi-Show Controller





TAKACHI ELECTRONICS ENCLOSURE CO., LTD.

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NOTICE

Changes to Gasket Color

■ **Changes** : Gasket color ONLY

■ **Affected** : EXW series - EXW12-6 models (12 models).

Product no.	Product no.	Product no.
EXW12-6-9BB	EXW12-6-13BB	EXW12-6-18BB
EXW12-6-9BG	EXW12-6-13BG	EXW12-6-18BG
EXW12-6-9BN	EXW12-6-13BN	EXW12-6-18BN
EXW12-6-9SB	EXW12-6-13SB	EXW12-6-18SB

■ Details



■ **Functionality**: No changes to functionality, size or dimensions.

■ **Purpose**: To ensure consistent quality throughout via streamlined supply chain and materials.

■ **Period**: Once current inventory has been depleted.

■ **Series / Model**: No changes to both Series, and Part numbering.

Thank you for your understanding.

For more information, kindly contact us at: sales@takachi-el.co.jp



- 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	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.

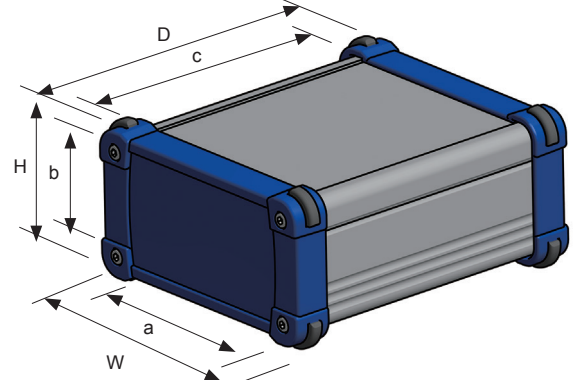
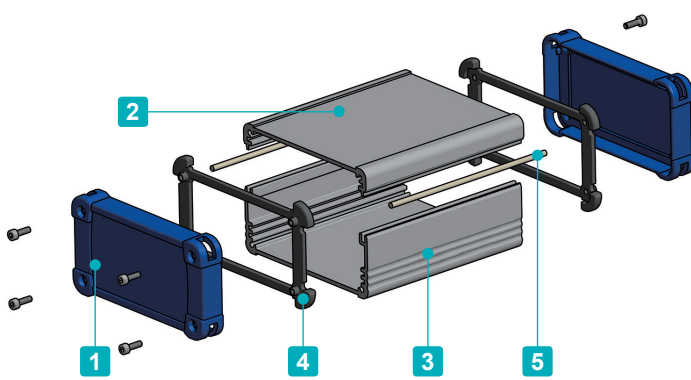
■ See page 217 ~ 220 for Top / Bottom cover dimensions

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.



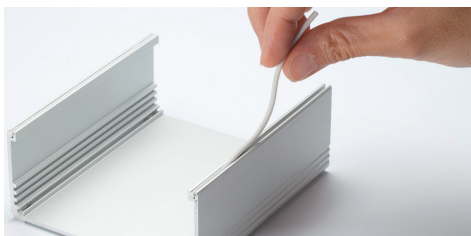
Product no. / Dimensions

■ 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.

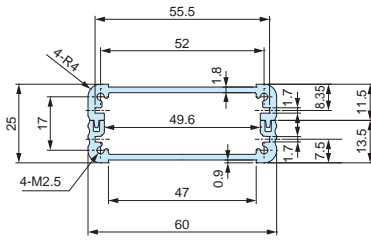


■ Ensure that a small portion of the cover gaskets protrude out in order to maintain connections with the end panels.

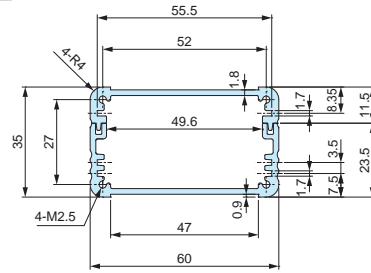
Cross-section view of top & bottom covers

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

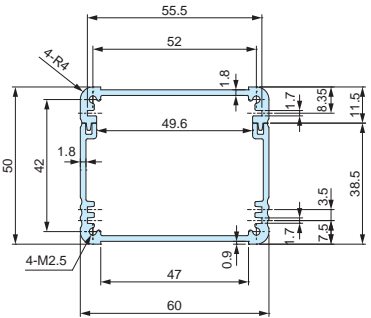
EXP • EXPE • EXW • EXPF • EXEF • EXWF7-3-□
EX6-3-□



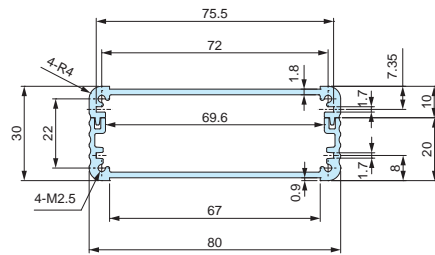
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EX6-4-□



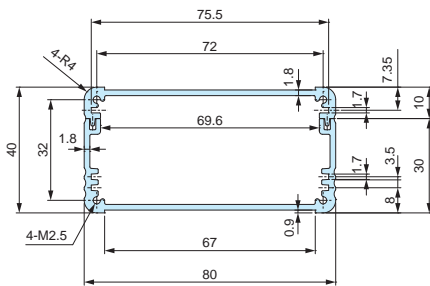
EXP • EXPE • EXW • EXPF • EXEF • EXWF7-6-□
EX6-5-□



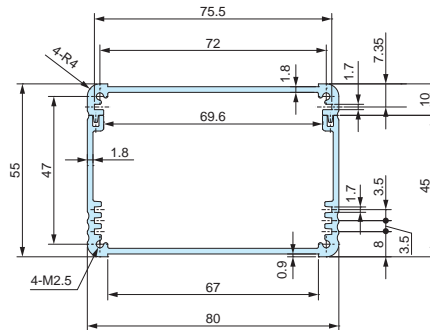
EXP • EXPE • EXW • EXPF • EXEF • EXWF9-4-□
EX8-3-□



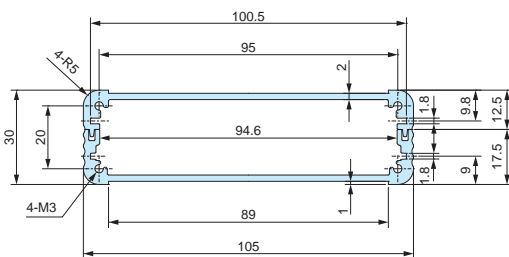
EXP • EXPE • EXW • EXPF • EXEF • EXWF9-5-□
EX8-4-□



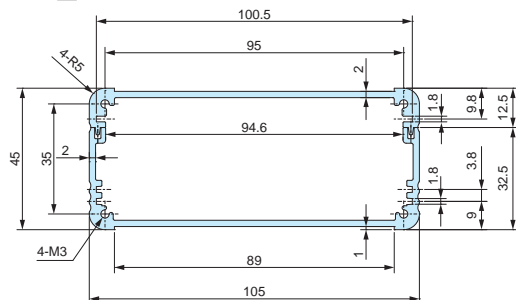
EXP • EXPE • EXW • EXPF • EXEF • EXWF9-6-□
EX8-6-□



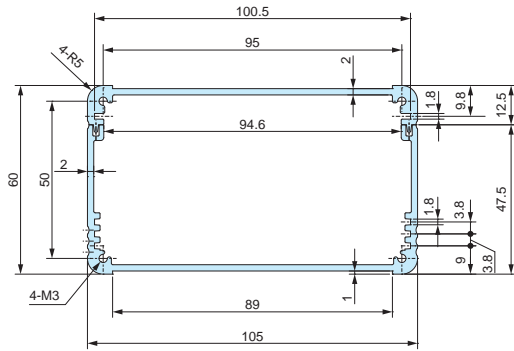
EXP • EXPE • EXW12-4-□
EXPF • EXEF • EXWF11-4-□
EX11-3-□



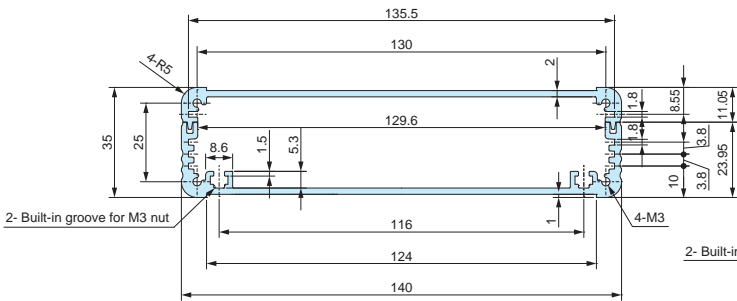
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EXPF • EXEF • EXWF11-6-□
EX11-5-□



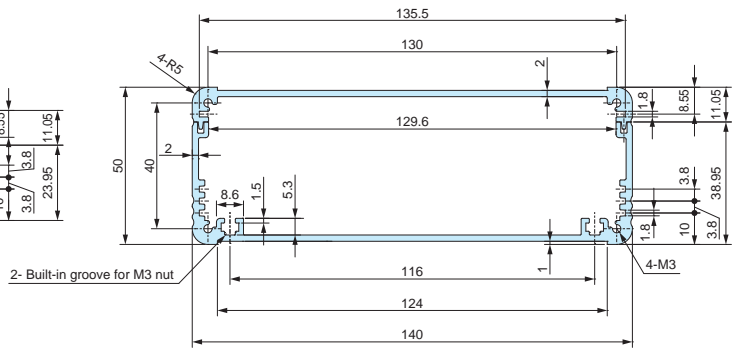
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 EXPF • EXEF • EXWF11-7-□
 EX11-6-□



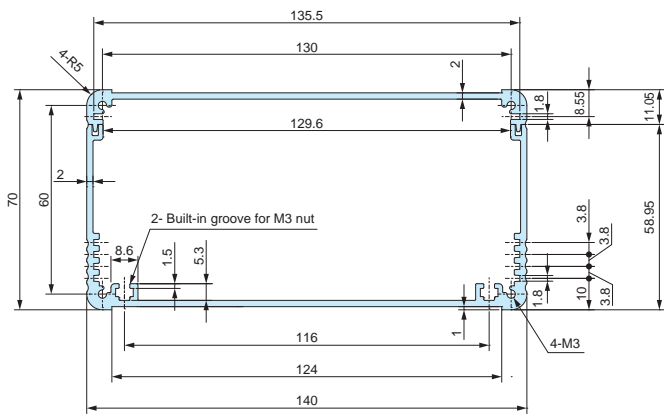
EXP • EXPE • EXW • EXPF • EXEF • EXWF15-5-□
 EX14-4-□



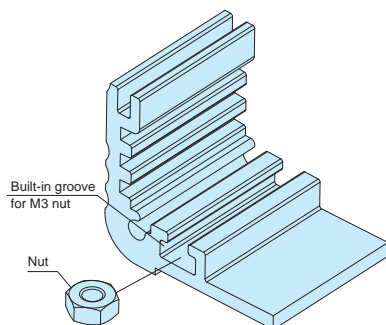
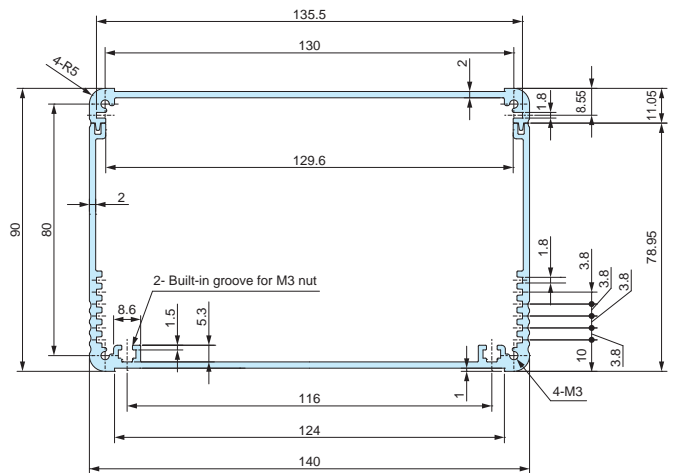
EXP • EXPE • EXW • EXPF • EXEF • EXWF15-6-□
 EX14-5-□



EXP • EXPE • EXW • EXPF • EXEF • EXWF15-8-□
 EX14-7-□



EXP • EXPE • EXW • EXPF • EXEF • EXWF15-10-□
 EX14-9-□

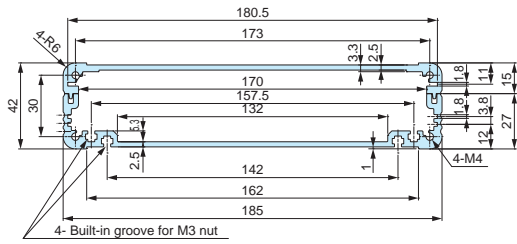


■ Optional sliding nut is available to be used for width 140mm or larger bottom covers. See page 221 for further details.

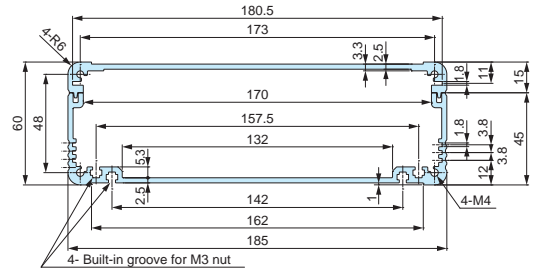
Cross-section view of top & bottom covers

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

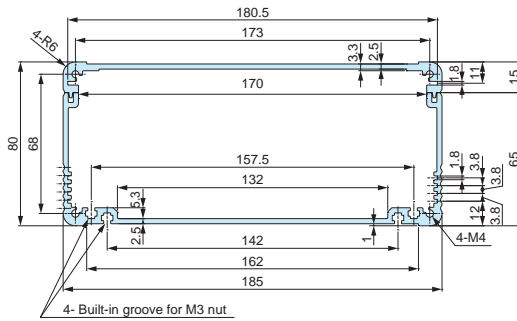
EXPT • EXP • EXPE • EXPF • EXEF • EXWF20-6-□
EX19-4-□



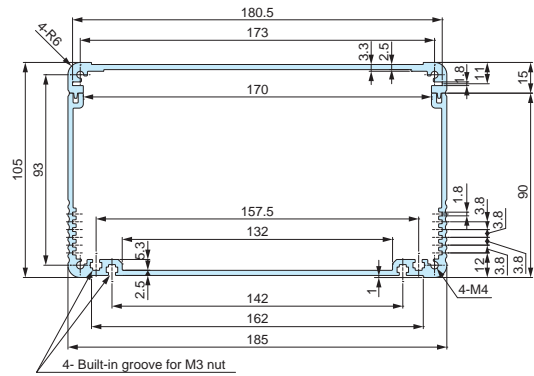
EXPT • EXP • EXPE20-7-□
EXPF • EXEF • EXWF20-8-□
EX19-6-□



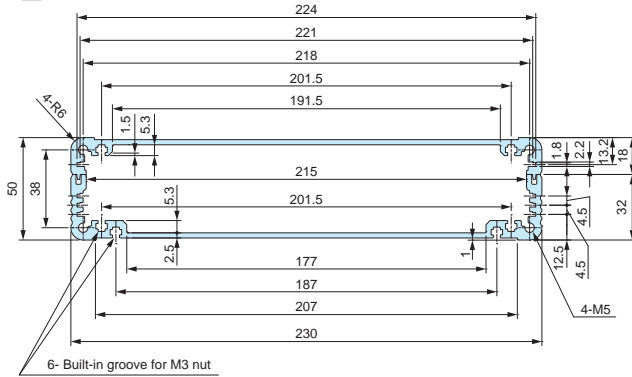
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EXPF • EXEF • EXWF20-10-□
EX19-8-□



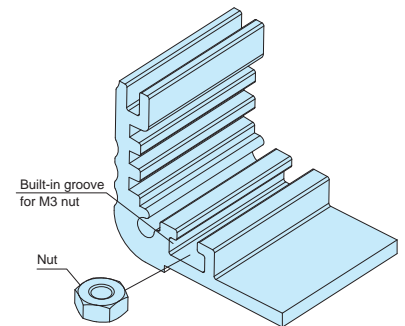
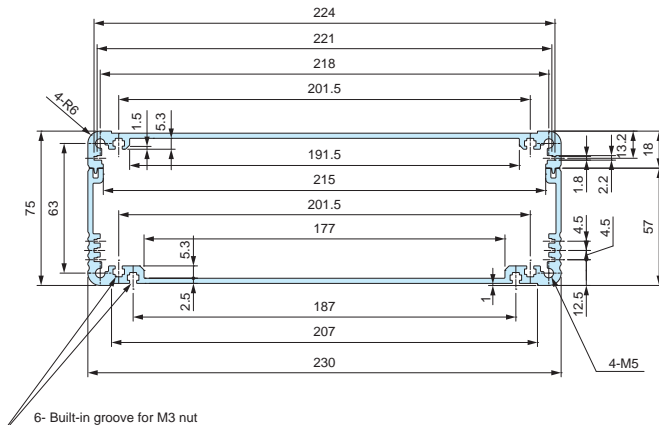
EXPT • EXP • EXPE • EXPF • EXEF • EXWF20-12-□
EX19-11-□



EXPT • EXP • EXPE24-6-□
EXPF • EXEF • EXWF24-7-□
EX23-5-□

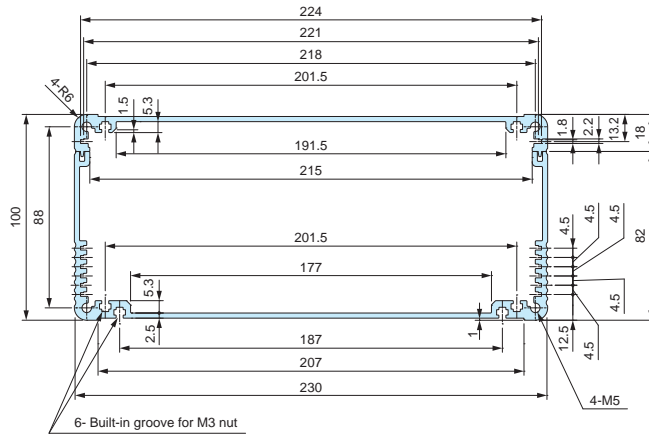


EXPT • EXP • EXPE • EXPF • EXEF • EXWF24-9-□
EX23-8-□

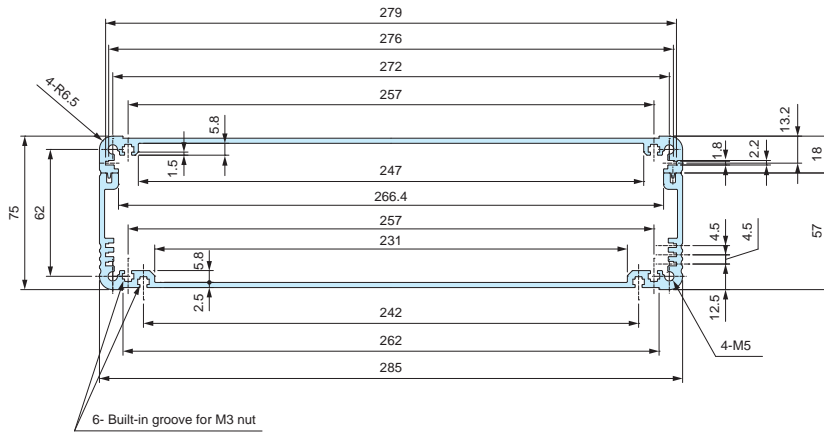


■ Optional sliding nut is available to be used for width 140mm or larger bottom covers. See page 221 for further details.

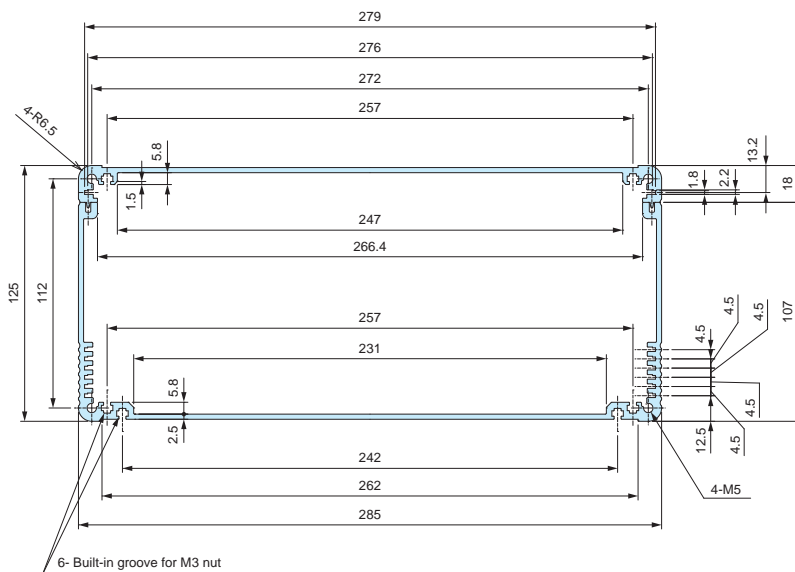
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 EXPF • EXEF • EXWF24-12-□
 EX23-10-□



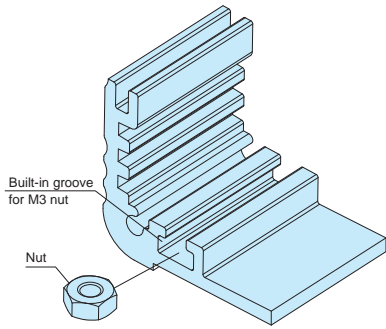
EXPT • EXP • EXPE • EXPF • EXEF • EXWF30-9-□
 EX29-8-□



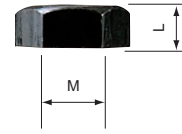
EXPT • EXP • EXPE • EXPF • EXEF • EXWF30-14-□
 EX29-13-□



MT-3N SLIDING NUT for EX□ • EXH□



MT-3N dimensions



Product no. / Dimensions

Product no.	M	L	Material	Finish	Pack of
MT-3N	3	2.4	Steel	Black trivalent chromate	50

- Sliding nut can be used on all EXPT • EXP • EXPE • EXW • EXPF • EXEF • EXWF • EX models with width 140mm or larger bottom covers, as well as with width 230mm and 285mm top covers, on all EXH • EXHE • EXHF • EXHFE models with width 140mm or larger bottom covers, as well as all heat-sink top covers.

EXEG series EMC SHIELDING FABRIC-OVER-FOAM GASKET

- Exclusive EMC shielding fabric-over-foam gasket for EXPE • EXEF • EXHE • EXHFE models.

Suitable Models

Product no.	Suitable models
EXEG-2.5	EXPE7-□, 9-□, 12-□, 15-□, EXEF7-□, 9-□, 11-□, 15-□ EXHE8-□, 11-□, 14-□, EXHFE8-□, 11-□, 14-□
EXEG-3.2	EXPE20-□, 24-□, 30-□, EXEF20-□, 24-□ EXHE19-□, 23-□, 29-□, EXHFE19-□, 23-□, 29-□

Product no. / Dimensions

Product no.	Dimensions	Pack of
EXEG-2.5	Φ2.5×500mm	1
EXEG-3.2	Φ3.2×500mm	1

Length tolerance = +/- 10%



- Material / Color : Conductive fiber • TPE / Metallic gray

EX series APPLICATION EXAMPLE

Tube Amplifier



IoT Relay Module



Premain Power Amplifier



USB Edge Node



TLW series

TILT LEG



APPLICATION EXAMPLE

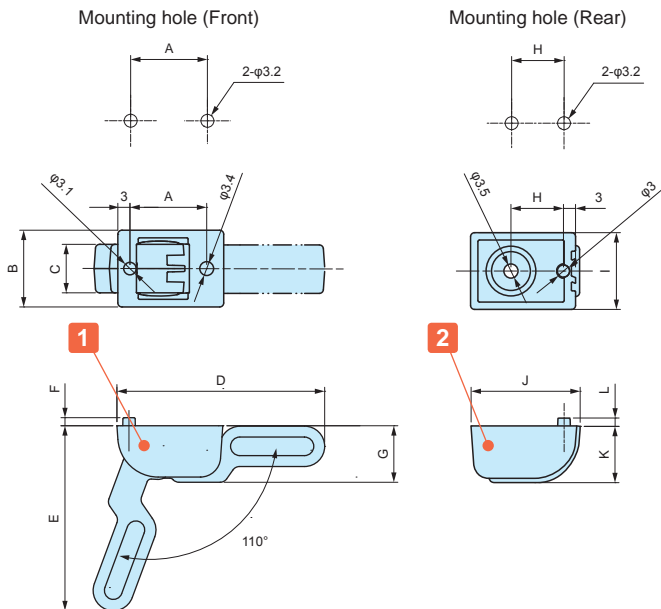
- Double shot injection molded feet with soft and well-designed rounded shape.
- Non-slip design with Elastomer (TPE) pad.
- Available in 3 different color patterns (2 color patterns for TLW-70 models).
- TLW-70E models are exclusively for use with width 185mm or larger bottom covers of EXP • EXPE • EXW • EX • EXH • EXHE aluminium enclosures.

Technical Data
Max load : 7kg

Components

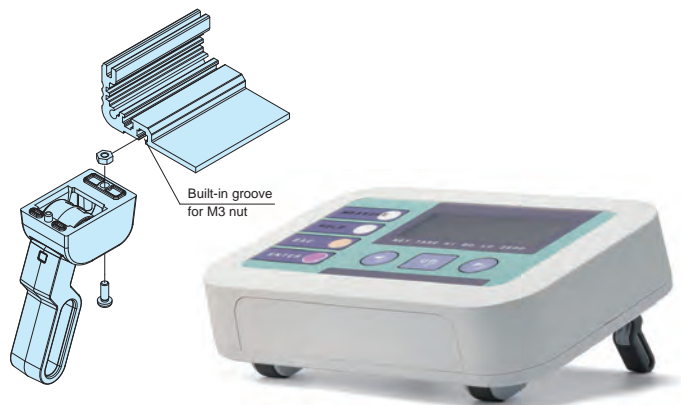
No.	Part name	Pcs	Material	Color / Finish
1	Front foot	2	PC + ABS UL94V-0 • TPE	Black & Black • Navy & Gray • Light gray & Gray
2	Rear foot	2	PC + ABS UL94V-0 • TPE	Black & Black • Navy & Gray • Light gray & Gray
-	Screw	4	Steel M3-8 pan head	Black trivalent chromate
-	Nut	4	Steel M3	Black trivalent chromate

TLW dimensions



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

- TLW-70E□□ models are for installation (with M3 nut) into the built-in grooves on bottom-covers of EXP • EXPE 20-6, EXH • EXHE • EX 19-4 or larger models.
- Hole milling is required to install TLW-46□□ and TLW-70□□ models.
- Max installation panel thickness : t = 3.5mm

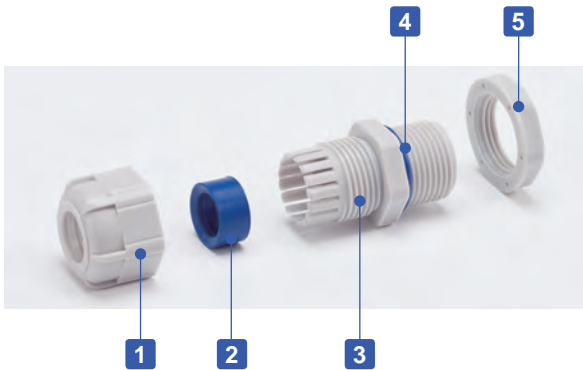


Product no. / Dimensions

Product no.	A	B	C	D	E	F	G	H	I	J	K	L	Color (plastic)	Color (TPE)	Weight (g)
TLW-46BB	19	19	12	51.2	45.9	2	14	13	19	27	14	2	Black	Black	23
TLW46-NG	19	19	12	51.2	45.9	2	14	13	19	27	14	2	Navy	Gray	23
TLW-46LG	19	19	12	51.2	45.9	2	14	13	19	27	14	2	Light gray	Gray	23
TLW-70EBB	-	25	16	75.4	69	3	21.5	-	25	39	21.5	3	Black	Black	59
TLW-70ENG	-	25	16	75.4	69	3	21.5	-	25	39	21.5	3	Navy	Gray	59
TLW-70ELG	-	25	16	75.4	69	3	21.5	-	25	39	21.5	3	Light gray	Gray	59
TLW-70BB	30	25	16	75.4	69	2	21.5	20	25	39	21.5	2	Black	Black	59
TLW-70LG	30	25	16	75.4	69	2	21.5	20	25	39	21.5	2	Light gray	Gray	59



- 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.



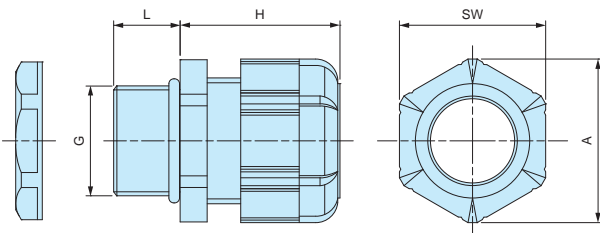
Components

■ 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	M8x1.25	Φ8.2	1	2.5	13	19.5	11.8	13.5	1
RMW8L-4B	RMW8L-4S	M8x1.25	Φ8.2	2.5	4	13	19.5	11.8	13.5	1
RMW10S-6B	RMW10S-6S	M10x1.5	—	3	6	8	20.5	13	14.4	1
RMW10L-6B	RMW10L-6S	M10x1.5	Φ10.2	3	6	13	20.5	13	14.4	1
RMW12S-7B	RMW12S-7S	M12x1.5	Φ12.2	3.5	7	9	20.5	16	17.6	1
RMW12L-7B	RMW12L-7S	M12x1.5	Φ12.2	3.5	7	14.5	20.5	16	17.7	1
RMW16S-8B	RMW16S-8S	M16x1.5	Φ16.2	4	8	9	23.5	19	21	1
RMW16L-8B	RMW16L-8S	M16x1.5	Φ16.2	4	8	15	24	19	21	1
RMW20S-12B	RMW20S-12S	M20x1.5	Φ20.2	6	12	10	29	24	26.2	1
RMW20L-12B	RMW20L-12S	M20x1.5	Φ20.2	6	12	15	28.5	24	26.2	1
RMW25L-17B	RMW25L-17S	M25x1.5	Φ25.2	11	17	15	35	33	36.2	1
RMW32L-21B	RMW32L-21S	M32x1.5	Φ32.3	13	21	15	38	36	39.5	1
RMW40L-27B	RMW40L-27S	M40x1.5	Φ40.3	18	27	18	43.5	45.7	50.5	1
RMW50L-38B	RMW50L-38S	M50x1.5	Φ50.4	27	38	20	50.5	60	66.5	1
RMW10L-6B-P	RMW10L-6S-P	M10x1.5	Φ10.2	3	6	13	20.5	13	14.4	100
RMW12S-7B-P	RMW12S-7S-P	M12x1.5	Φ12.2	3.5	7	9	20.5	16	17.6	100
RMW12L-7B-P	RMW12L-7S-P	M12x1.5	Φ12.2	3.5	7	14.5	20.5	16	17.7	100
RMW16S-8B-P	RMW16S-8S-P	M16x1.5	Φ16.2	4	8	9	23.5	19	21	100
RMW16L-8B-P	RMW16L-8S-P	M16x1.5	Φ16.2	4	8	15	24	19	21	100
RMW20S-12B-P	RMW20S-12S-P	M20x1.5	Φ20.2	6	12	10	29	24	26.2	100
RMW20L-12B-P	RMW20L-12S-P	M20x1.5	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/m² at 300-400nm
 Black Panel Temperature : 63±3°C Humidity Range : 50±10%
 Cycle Conditions : 120 minutes cycle (18 minutes irradiation + water spray - 102 minutes irradiation)
Time period : 2,000 hours (equivalent to a period of 4 years under natural conditions)
Total radiant exposure : 1296MJ/m²

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

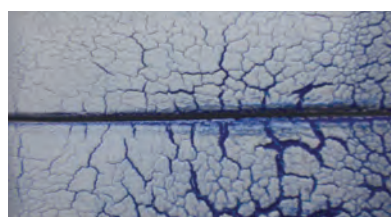


EPDM material from weatherproof cable gland of another manufacturer : Cracked, color drastically faded and powder appeared on the surface.

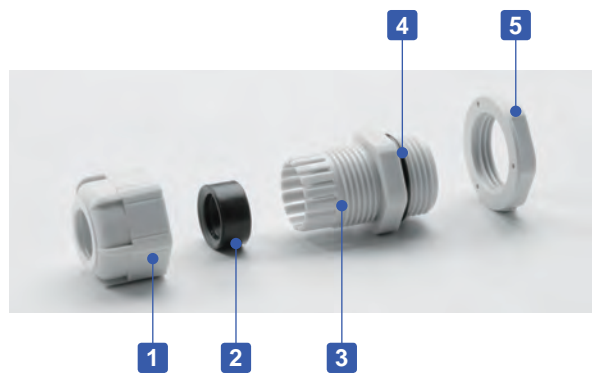
Before



After



RM series POLYAMIDE CABLE GLAND



- 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.

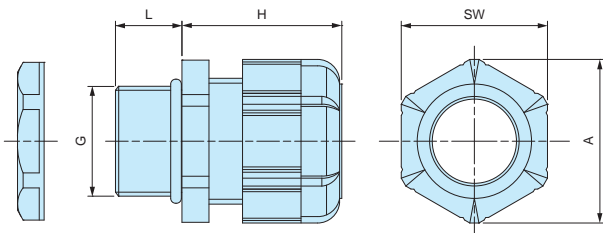
Components

■ 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°C ~ +80°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	M8x1.25	—	1	2.5	7.5	19.5	11.8	13.5	1
RM8L-2.5B	RM8L-2.5S	M8x1.25	$\Phi 8.2$	1	2.5	13	19.5	11.8	13.5	1
RM8S-4B	RM8S-4S	M8x1.25	—	2.5	4	7.5	19.5	11.8	13.5	1
RM8L-4B	RM8L-4S	M8x1.25	$\Phi 8.2$	2.5	4	13	19.5	11.8	13.5	1
RM10S-6B	RM10S-6S	M10x1.5	—	3	6	8	20.5	13	14.4	1
RM10L-6B	RM10L-6S	M10x1.5	$\Phi 10.2$	3	6	13	20.5	13	14.4	1
RM12S-7B	RM12S-7S	M12x1.5	$\Phi 12.2$	3.5	7	9	20.5	16	17.6	1
RM12L-7B	RM12L-7S	M12x1.5	$\Phi 12.2$	3.5	7	14.5	20.5	16	17.7	1
RM16S-8B	RM16S-8S	M16x1.5	$\Phi 16.2$	4	8	9	23.5	19	21	1
RM16L-8B	RM16L-8S	M16x1.5	$\Phi 16.2$	4	8	15	24	19	21	1
RM20S-12B	RM20S-12S	M20x1.5	$\Phi 20.2$	6	12	10	29	24	26.2	1
RM20L-12B	RM20L-12S	M20x1.5	$\Phi 20.2$	6	12	15	28.5	24	26.2	1
RM25L-17B	RM25L-17S	M25x1.5	$\Phi 25.2$	11	17	15	35	33	36.2	1
RM32L-21B	RM32L-21S	M32x1.5	$\Phi 32.3$	13	21	15	38	36	39.5	1
RM40L-27B	RM40L-27S	M40x1.5	$\Phi 40.3$	18	27	18	43.5	45.7	50.5	1
RM50L-38B	RM50L-38S	M50x1.5	$\Phi 50.4$	27	38	20	50.5	60	66.5	1
RM63L-44B	RM63L-44S	M63x1.5	$\Phi 63.4$	37	44	20	53	68	75.5	1
RM10L-6B-P	RM10L-6S-P	M10x1.5	$\Phi 10.2$	3	6	13	20.5	13	14.4	100
RM12S-7B-P	RM12S-7S-P	M12x1.5	$\Phi 12.2$	3.5	7	9	20.5	16	17.6	100
RM12L-7B-P	RM12L-7S-P	M12x1.5	$\Phi 12.2$	3.5	7	14.5	20.5	16	17.7	100
RM16S-8B-P	RM16S-8S-P	M16x1.5	$\Phi 16.2$	4	8	9	23.5	19	21	100
RM16L-8B-P	RM16L-8S-P	M16x1.5	$\Phi 16.2$	4	8	15	24	19	21	100
RM20S-12B-P	RM20S-12S-P	M20x1.5	$\Phi 20.2$	6	12	10	29	24	26.2	100
RM20L-12B-P	RM20L-12S-P	M20x1.5	$\Phi 20.2$	6	12	15	28.5	24	26.2	100
RM25L-17B-P	RM25L-17S-P	M25x1.5	$\Phi 25.2$	11	17	15	35	33	36.2	100

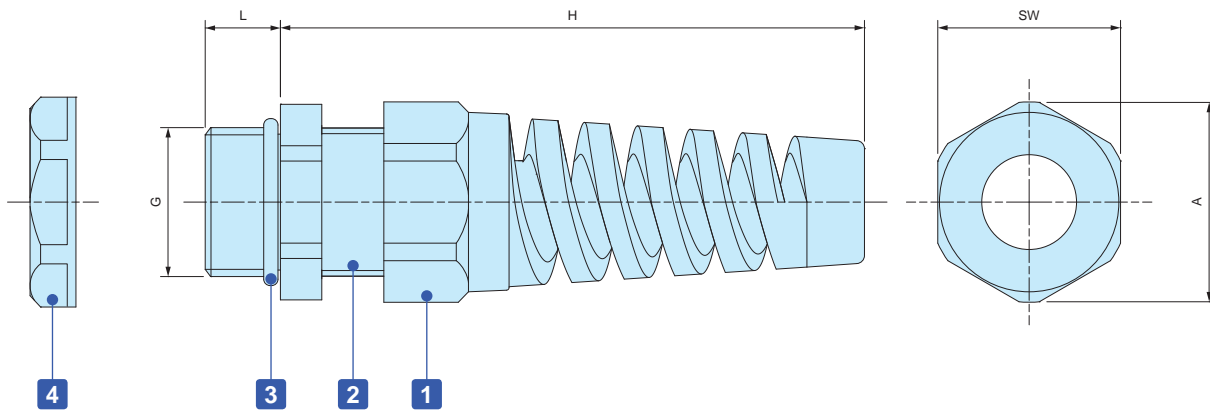


■ Strain relief cap protects cables by preventing it from bending beyond its limit and breaking.

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	M12x1.5	Φ12.2	3.5	6	9	62	16	17	1
RSP16-8B	RSP16-8S	M16x1.5	Φ16.2	4	8	9	69	19.5	21	1
RSP20-11B	RSP20-11S	M20x1.5	Φ20.2	6	11	10	82	24	26	1
RSP25-16B	RSP25-16S	M25x1.5	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 Φ 2.5mm ~ Φ 42 mm cable.
- Super tough and superior heat resistant PA6GF (glass fiber filled PA6) material on cap and connector.
- Safer halogen free, eco-friendly product.

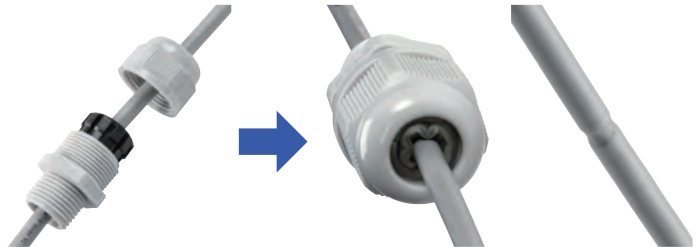
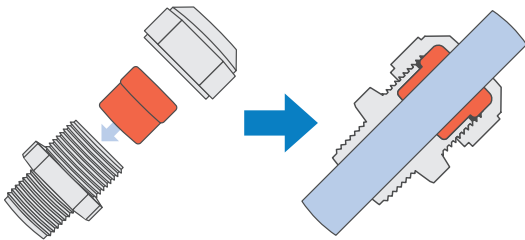
Technical Data
Protection class: IP68 1bar / 30min
Operating temperature: -20°C ~ +100°C
Compliant with EN50262 Ver. A

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

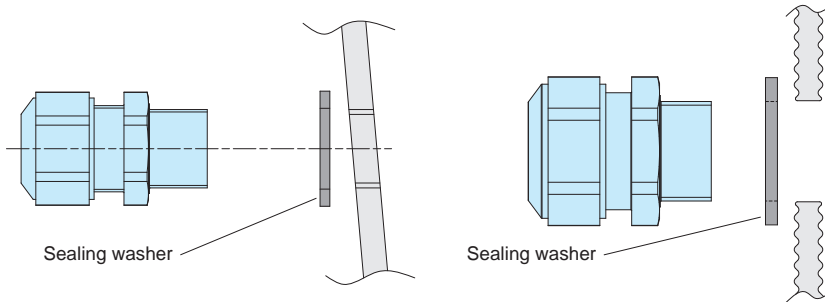
No.	Part name	Material
1	Cap	PA6GF
2	Sealing insert	TPE
3	Connector	PA6GF
4	Lock nut	PA6

- 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.

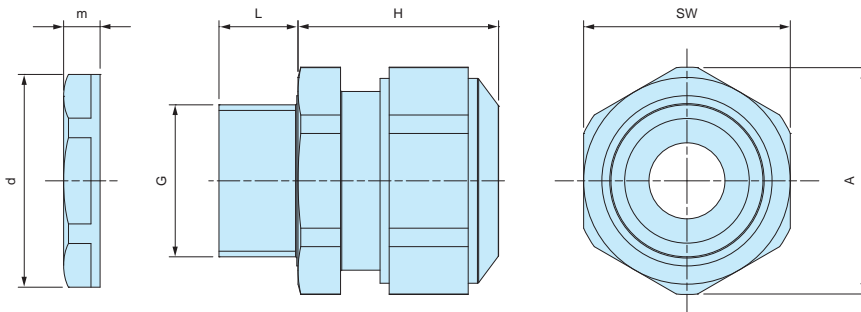


- No optional sealing washer is required when installing on an even surface because of the built-in waterproof rib.
- An optional sealing washer is required when installing on an uneven surface. (See website for more information on the optional sealing washer)



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

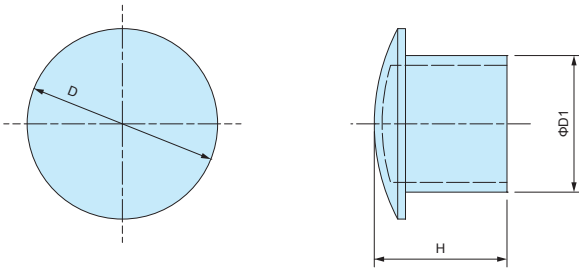
Product no.		G		Cable range		L	H Max	SW	A	d	m	Pack of
● Black	● Light gray	Thread size	Mounting hole	Min	Max							
AG8-3.5B	AG8-3.5S	M8x1.0	—	2.5	3.5	10	17	12	13.2	—	—	1
AG8-5B	AG8-5S	M8x1.0	—	3.5	4.7	10	17	12	13.2	—	—	1
AG10-6B	AG10-6S	M10x1.0	—	4	6	10	19	15	16.5	—	—	1
AG12-5B	AG12-5S	M12x1.5	Φ12.2	3.5	4.7	12	23.5	17	18.7	18.8	5	1
AG12-6.5B	AG12-6.5S	M12x1.5	Φ12.2	5	6.5	12	23	17	18.7	18.8	5	1
AG12-8B	AG12-8S	M12x1.5	Φ12.2	6.5	7.8	12	23	17	18.7	18.8	5	1
AG16-10B	AG16-10S	M16x1.5	Φ16.2	8	10	12	26	21	23.1	24.3	5	1
AG20-15B	AG20-15S	M20x1.5	Φ20.2	11	15	13	27	27	29.7	29	6	1
AG25-16B	AG25-16S	M25x1.5	Φ25.2	12.5	16	13	34	34	37.4	36	6.7	1
AG25-20B	AG25-20S	M25x1.5	Φ25.2	16	20	13	34	34	37.4	36	6.7	1
AG32-25.5B	AG32-25.5S	M32x1.5	Φ32.3	21	25.5	15	36	41	45.6	46	8	1
AG40-28.5B	AG40-28.5S	M40x1.5	Φ40.3	24	28.5	15	41	50	55.4	53.5	9	1
AG40-33B	AG40-33S	M40x1.5	Φ40.3	28.5	33	15	41	50	55.4	53.5	9	1
AG50-37B	AG50-37S	M50x1.5	Φ50.4	33	37	16	45	60	65.5	66	9.6	1
AG50-42B	AG50-42S	M50x1.5	Φ50.4	37	42	16	45	60	65.5	66	9.6	1

SP SERIES

SEALING PLUG



SP dimensions



■ Material : Nylon

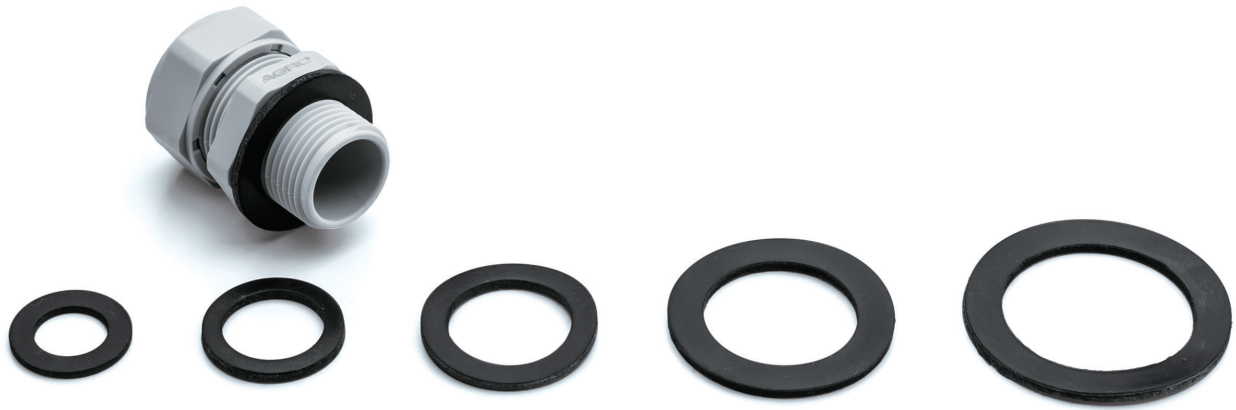
- Sealing plug for cable glands when not in use.
- Maintain a waterproof seal when plugged into the sealing insert on cable glands.

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

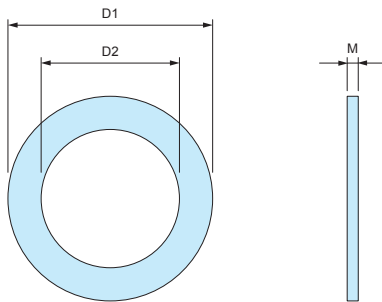
AGP SERIES

SEALING WASHER for AG • AGSP

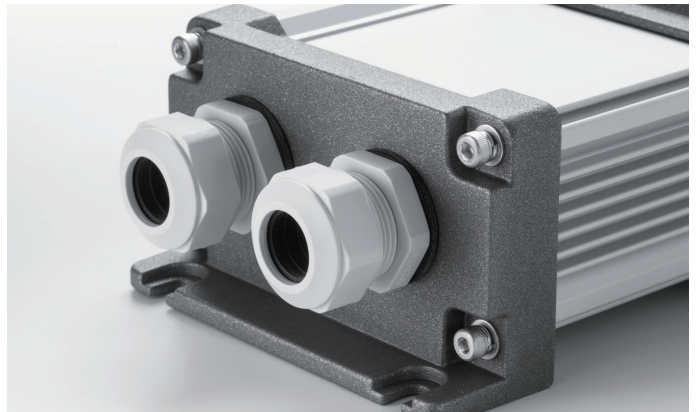


- Sealing washer for AG series.
- Made from oil resistant NBR material.
- Use in the case of installation on a rough or uneven surfaces.
- Selectable in 7 sizes (from M12 to M50)
- Sealing washer is not necessary for installation on flat surfaces.

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



- 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.

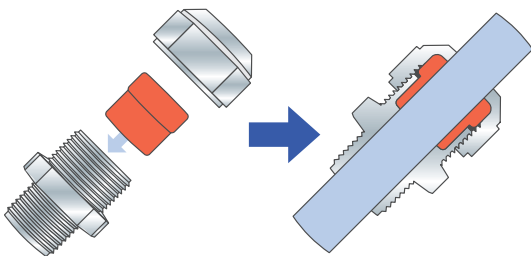
Technical Data
Protection class: IP68 1bar / 30min
Operating temperature: -40°C ~ +100°C
Compliant with EN50262 Ver. A

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.

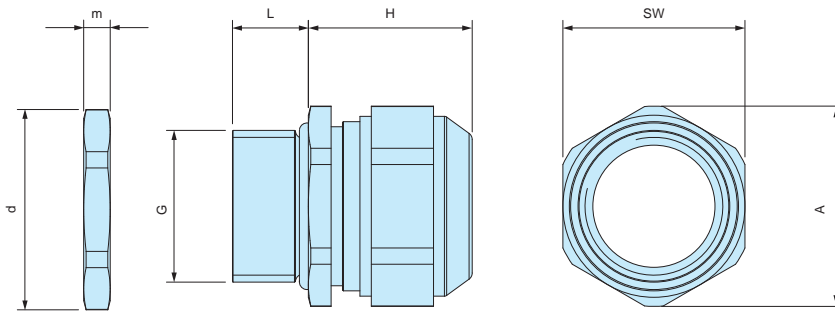


Components

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	M6x1.0	—	Φ6.2	2	2.5	8	12	8	9	10	2.8	1
AGM6-3	M6x1.0	—	Φ6.2	2.5	3.0	8	12	8	9	10	2.8	1
AGM6-3.5	M6x1.0	—	Φ6.2	3.0	3.5	8	12	8	9	10	2.8	1
AGM8-5	M8x1.25	—	Φ8.2	3.5	4.7	10	14	11	12	12	3	1
AGM10-6	M10x1.5	—	Φ10.2	4.0	6.0	10	15	13	14.3	14	2.8	1
AGM12-8	M12x1.5	—	Φ12.2	6.5	8.0	10	17	15	16.5	16.5	2.8	1
AGM16-10.5	M16x1.5	—	Φ16.2	8.0	10.5	10	21	18	20	21	3	1
AGM20-15	M20x1.5	—	Φ20.2	11.0	15.0	10	23	24	26.5	26.5	3.5	1
AGM25-20	M25x1.5	—	Φ25.2	16.0	20.0	11	28	30	33	33	4	1
AGM32-25.5	M32x1.5	—	Φ32.3	21.0	25.5	13	29.5	36	39.5	39.5	4	1
AGM40-28.5	M40x1.5	—	Φ40.3	24.0	28.5	13	32	46	50.7	51	5	1
AGM40-33	M40x1.5	—	Φ40.3	28.5	33.0	13	32	46	50.7	51	5	1
AGM50-37	M50x1.5	—	Φ50.4	33.0	37.0	14	34	55	59.7	60	5.5	1
AGM50-42	M50x1.5	—	Φ50.4	37.0	42.0	14	34	55	59.7	60	5.5	1

AGE SERIES

EMC SHIELDED CABLE GLAND

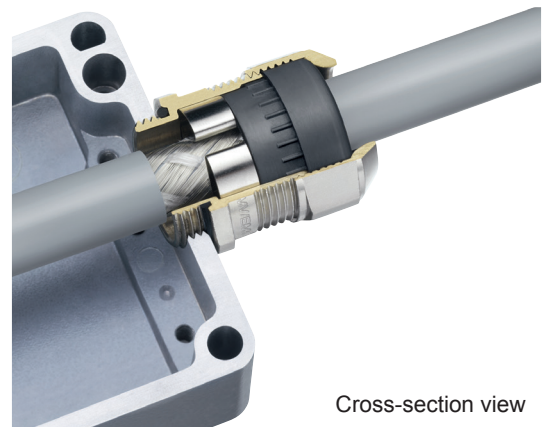
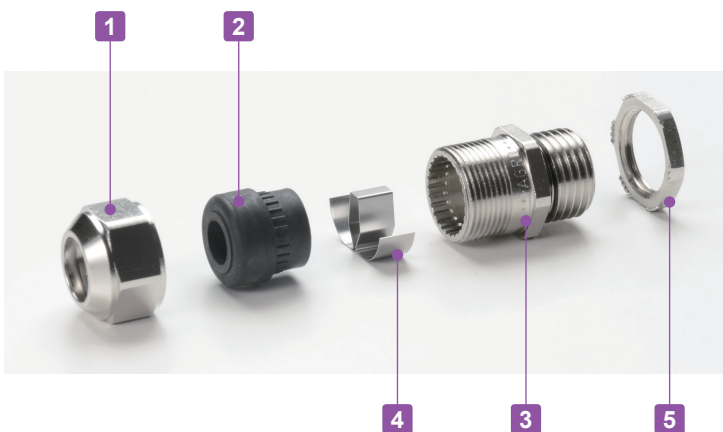
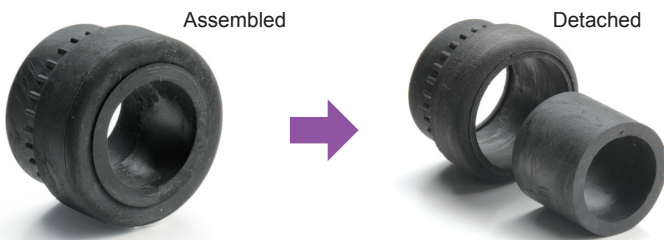


- Optimal contact spring provides excellent shield contact and the smallest possible transfer impedance.
- Clawed lock nut makes a good EMC shield contact possible on conductive enclosures.
- Shape of the contact spring not only allows for a large clamping range to the shield but also enables easy and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

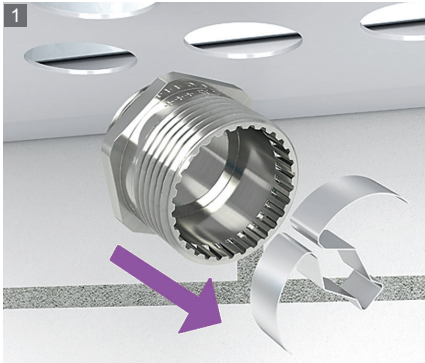


Cross-section view

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



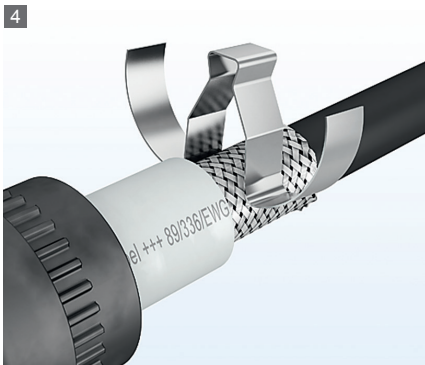
1 Remove the contact spring from the connector.



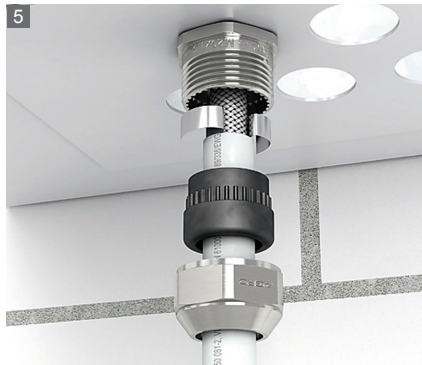
2 Install the connector onto the enclosure.



3 Strip the cable.



4 Clip the contact spring on the shielded cable.



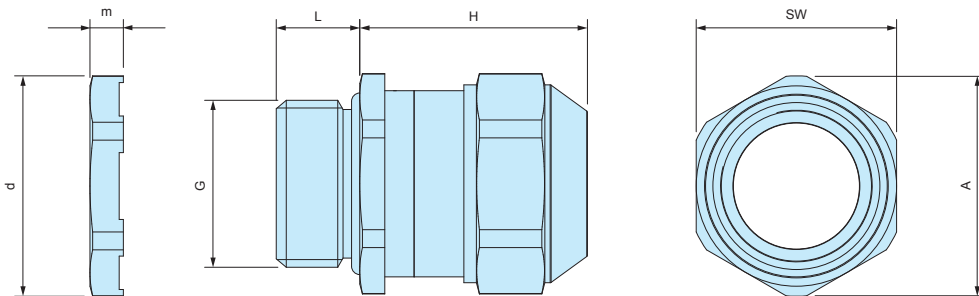
5 Pass the cable through the Sealing insert and cap.



6 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

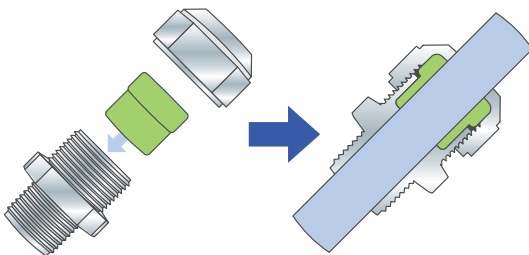


- Heat resistant sealing insert made of FPM material. Resistant up to 200°C
- IP68 1bar / 30min high performance waterproof cable gland.

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

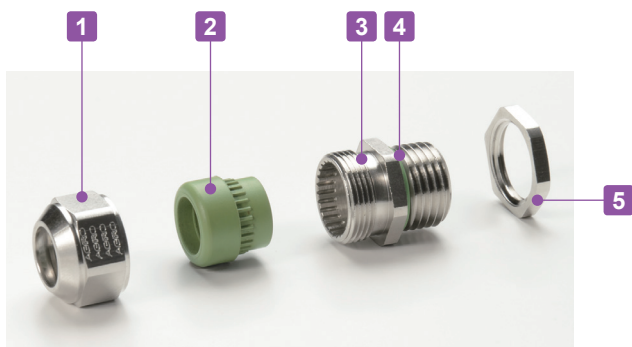
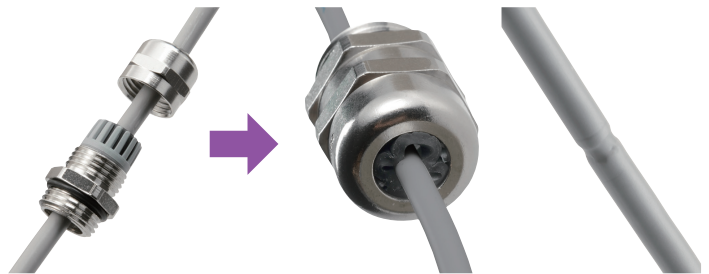
AGH series

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

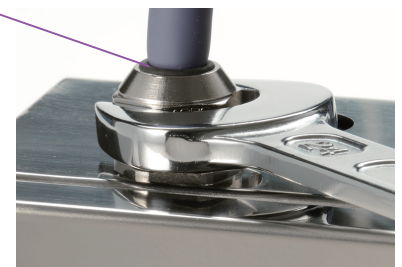


Conventional cable gland

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.

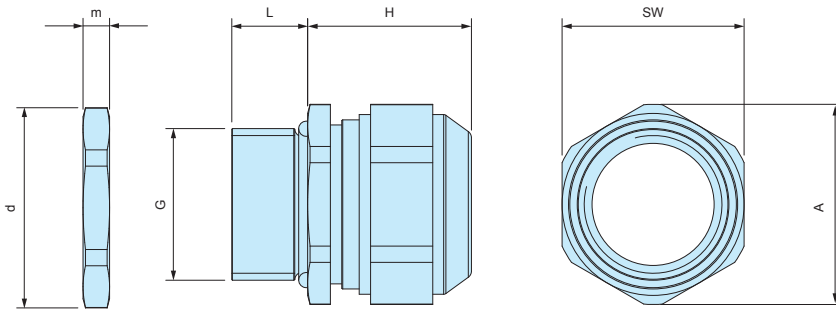


Components

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.

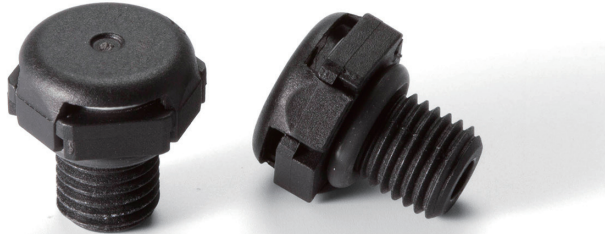


Product no. / Dimensions

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

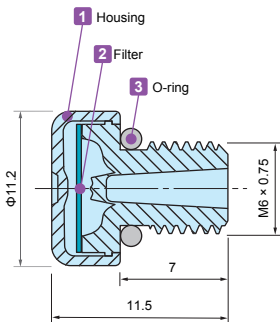
SMALL PROTECTIVE VENT



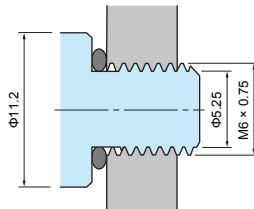
Application example

- 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.

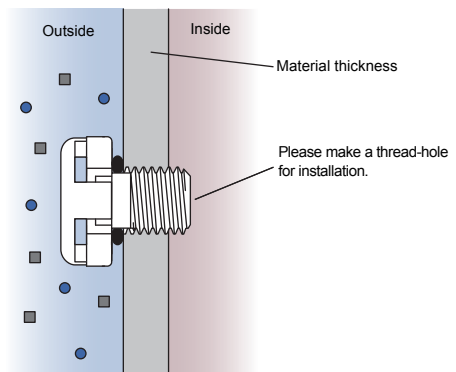
PMF-6B dimensions



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

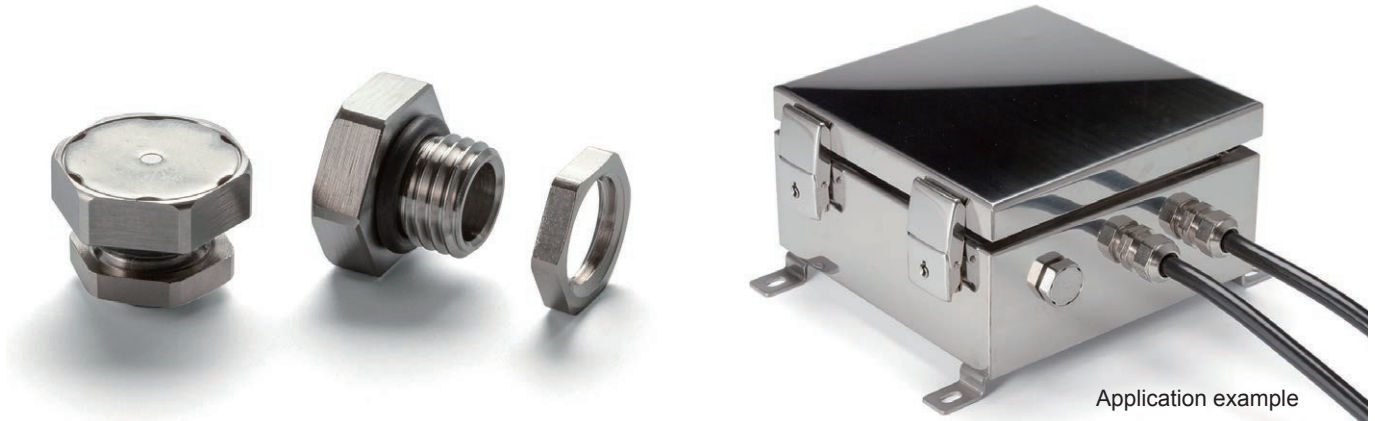
Product no.	Material			G	
● Black	1 Housing	2 Filter	3 O-ring	Thread size	Mount hole
PMF-6B	PA6 (Body) • PA66 (Cap)	PTFE	Silicone	M6 x 0.75	—

PMF-12M

STAINLESS STEEL PROTECTIVE VENT

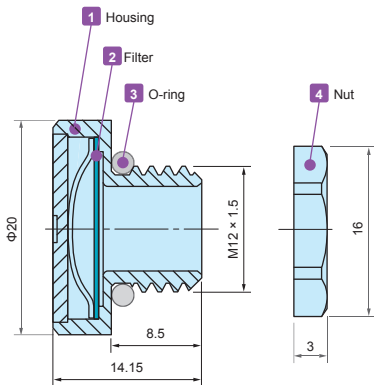
★ ★ NEW

IP68 IP69K

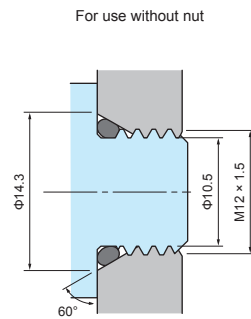


- Stainless steel protective vent for superior durability and chemical resistance.
- IP68 protection class (water depth 2 meters / 60 mins) and -40°C ~ +125°C operating temperature range allows it to be used in various environments.
- Suitable for enclosures with capacities of 20 liters or under.
- For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

PMF-12M dimensions

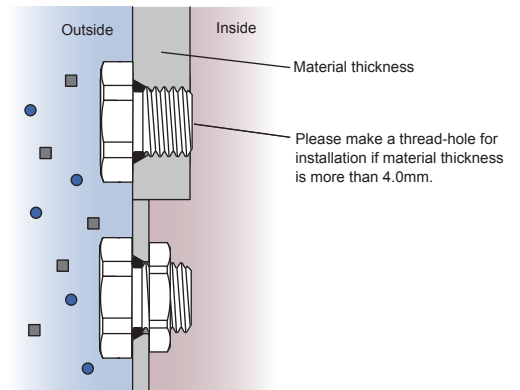


Hole milling drawings



■ 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. / Dimensions

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	Φ12.2	15

PMF series

PROTECTIVE VENT

Pressure Equalization / Ventilation



Application Example

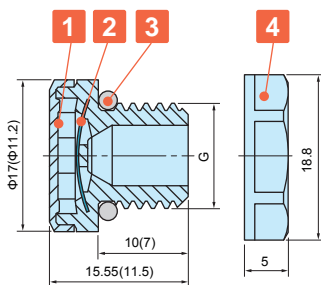
- Protective vent protects the enclosure from deformation by equalizing internal and external pressure differences, as well as venting the gas generated within the enclosure.
- IP68 protection class (water depth 2 meters / 60 mins) with an operating temperature range -40°C ~ +125°C allows them to be used in harsh environments.
- PMF-6B model is suitable for enclosures with capacities of up to 2.0 liters. 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

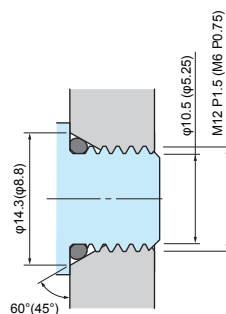
Hole milling drawings

Installation drawings

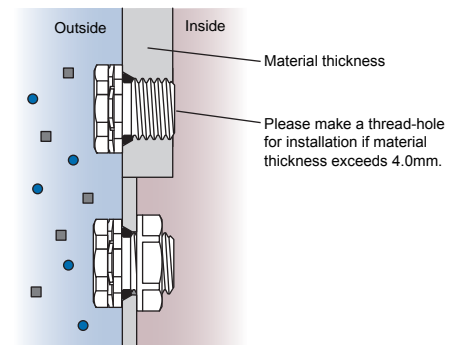
■ DXF/DWG/PDF drawings available on our website.



() values are for PMF-6B.
Lock nut is not available for PMF-6B



■ 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-6B	PMF-12	PNF-12HA
Airflow	300ml / min (dp = 7kPa)	450ml / min (dp = 7kPa)	4,000ml / min (dp = 7kPa)
Recommended torque	0.2 ~ 0.4N · m	0.6 ~ 0.8N · m	0.6 ~ 0.8N · m
Certifications	IEC60529 (Protection class test) : IP65 • IP66 • IP67 • IP68 • IP69K (Not for PMF-6B) IEC60068-2-1, 2, 14 (Heat resistance test) : - 40°C ~ +125°C (~+150°C for PMF-6B) 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. / Dimensions

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- 6B	PA6 / 66	PTFE	Silicone	—	M6 x P0.75	—	—
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