

WH series

IP67 WATERPROOF HAND-HELD ENCLOSURE



● The protection rating against dust and water which applies to the enclosure used for electrical equipment, represented with a code based on the IEC60529 standard.

IP6x : No ingress of dust; complete protection against contact (dust tight)

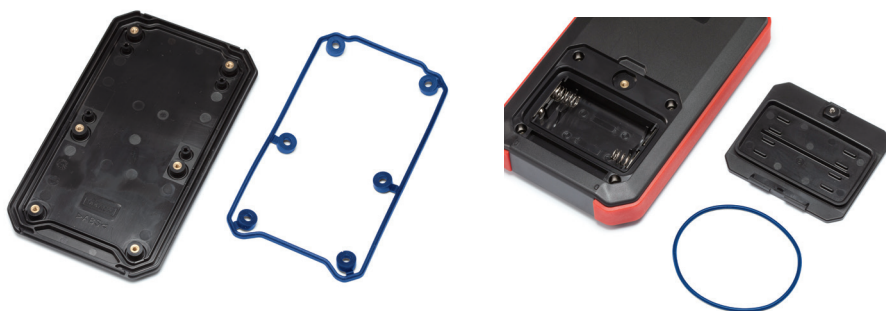
IPx7 : No ingress of water when submerged up to a depth of 1 m for 30 min

High waterproof performance with a silicone gasket

High elasticity and good durability for maintaining waterproofing capability.
Built-in insert nut use for great long lasting water protection even after frequent opening and closing. Battery compartment is also waterproofed.
Various battery compartment types are available, ranging from AAA x2 to AA x6.

Side grip provides great protection

Elastic TPE grips provide a more secured hold.
Side grips are designed to be on the sides and corners of the enclosure to minimize drop impact.



Available in 10 different color combinations



Information on waterproofing overlay sheets



APPLICATION EXAMPLE

Ultrasonic Thickness Gauge



Note that waterproofing will be lost if a hole is made for button or switch on waterproof enclosures.
Please utilize a waterproof (IP67 rated equivalent) membrane keypad or switch, or overlay sheet for maintaining IP67.
See page Custom-11 and 12 for further details on digital printed overlay.



APPLICATION EXAMPLE

Suitable for industrial measuring instruments, transceivers, controllers, medical equipment and more.

Portable Signal Generator



Wireless CO₂ Microclimate Sensor



Wireless Food Probe Sensor



Wireless Temperature Detector



Sigfox Network Measurement Device

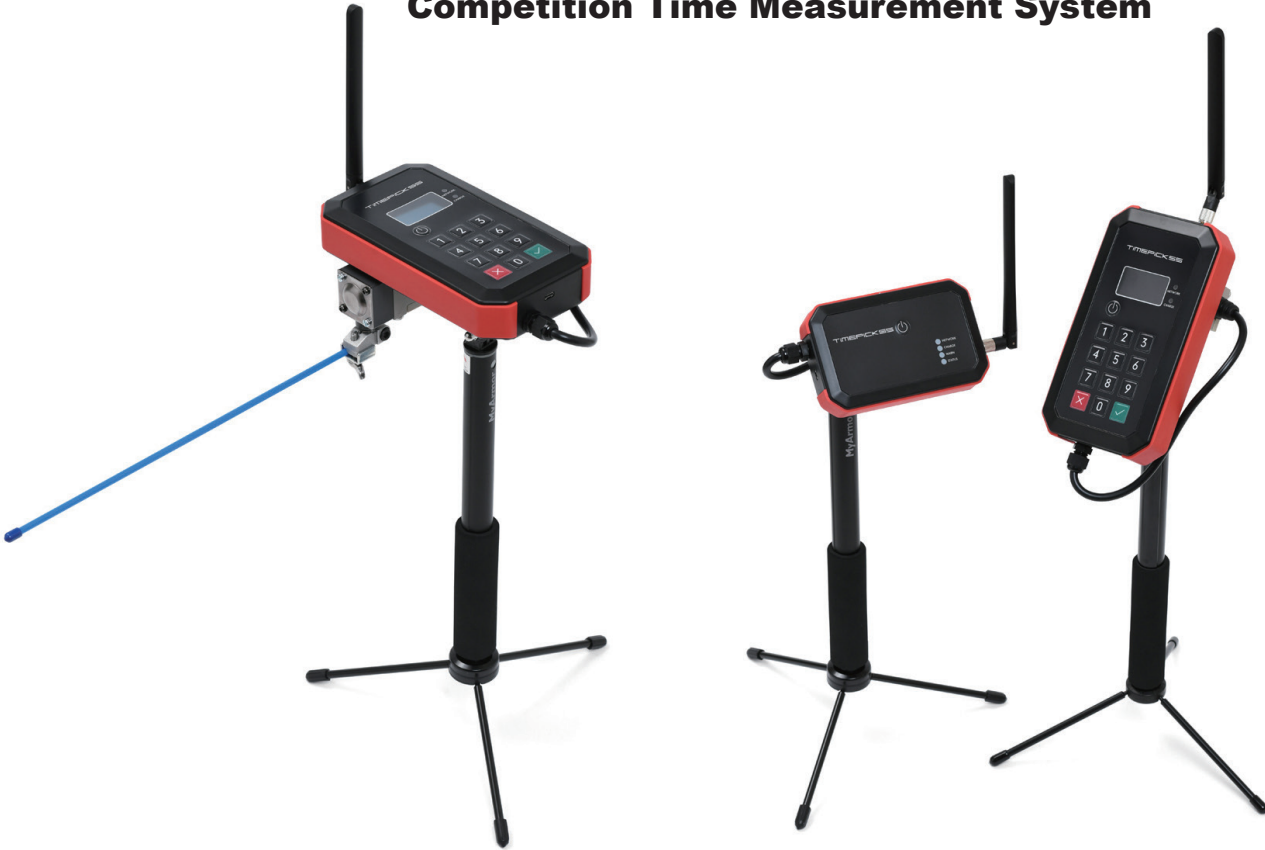


IoT Temperature Monitoring Sensor for HACCP



*See page 23 for further details on Sigfox.

Competition Time Measurement System



Portable Airflow Meter



Honey Bee Tracker



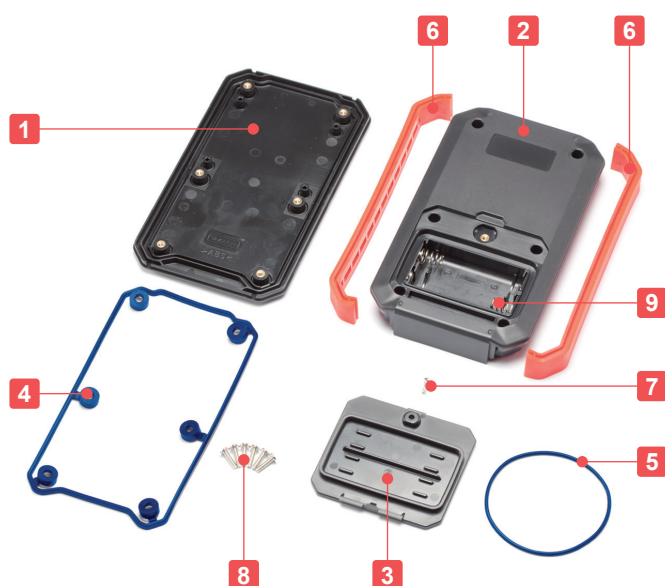
Digital X-ray System





Technical Data

Protection class : IP67
 Operating temperature : -10°C ~ +60°C
 Recommended torque:
 0.2N • m ~ 0.3N • m
 (2kgf • cm ~ 3kgf • cm)



- Stylish and elegantly designed with chamfered edge construction.
- IP67 protection class enclosure.
- Manufactured from flame-resistant ABS UL94V-0 material.
- 8 different internal compartment types are available: AAA x 2, AAA x 3, AAA x 4, AA x 2, AA x 3, AA x 4, AA x 6 and no battery type. Battery compartments have positive (+) / negative (-) pole mark to prevent incorrect insertion.
- The TPE side grips are available in 5 unique colors, and function as an anti-slip grip pad and drop impact protection.

Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS UL94V-0	Off-white • Black
2	Bottom cover	1	ABS UL94V-0	Off-white • Black
3	Battery cover *	1	ABS UL94V-0	Off-white • Black
4	Gasket	1	Silicone	N • F2 • F3 • M4 type : Black
5	O-ring *	1	Silicone	M2 • M6 type : Blue M3 • F4 • type : Light gray
6	Side grip	2	TPE	Black • Light gray • Navy • Red • Yellow
7	Battery cover screw *	1	Stainless steel M2.5-8	Unfinished
8	Screw	6	Stainless steel M2.5-10	Unfinished
9	Battery contact *	1 set	Brass	Nickel plated

*Not applicable to the N (no battery compartment type) models.

Accessories (Optional parts)



PCB mounting screw EM-2.3
See page 398



Tapping standoff TPS series
See page 397



Cable gland
See page 181 ~ 193



Neodymium magnet NMG series
See page 392

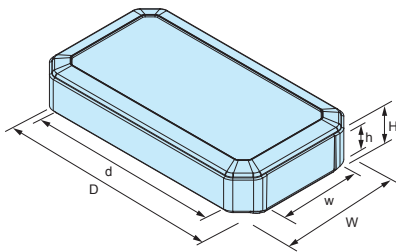
Battery Compartment Types

Type	N None	F2 AAA x 2	F3 AAA x 3	F4 AAA x 4	M2 AA x 2	M3 AA x 3	M4 AA x 4	M6 AA x 6
Battery Compartment								

Color Type

Code	[B][B] Black / Black	[B][L] Black / Light gray	[B][N] Black / Navy	[B][R] Black / Red	[B][Y] Black / Yellow
Color					
Code	[W][B] Off-white / Black	[W][L] Off-white / Light gray	[W][N] Off-white / Navy	[W][R] Off-white / Red	[W][Y] Off-white / Yellow
Color					

WH dimensions



Product no. / Details

Product no.	External dimensions			Internal dimensions			Battery compartment	Weight (g)
	W	H	D	w	h	d		
WH125-20-N -□□	79	20	126	39	9	107.7	None	101.0
WH125-20-F2 -□□	79	20	126	60	9	46.4	AAA x 2	102.0
WH125-20-F3 -□□	79	20	126	60	9	35.9	AAA x 3	109.0
WH125-28-N -□□	79	28	126	39	17	106.3	None	119.0
WH125-28-F2 -□□	79	28	126	60	17	46.4	AAA x 2	121.0
WH125-28-F3 -□□	79	28	126	60	17	35.9	AAA x 3	127.0
WH145-20-N -□□	88	20	146	45	8	129.6	None	125.5
WH145-20-F4 -□□	88	20	146	69.4	8	36.5	AAA x 4	129.5
WH145-25-N -□□	88	25	146	45	13	129.6	None	137.5
WH145-25-M2 -□□	88	25	146	69.2	13	51.5	AA x 2	161.5
WH145-25-M3 -□□	88	25	146	69.2	13	36.5	AA x 3	159.5
WH145-33-N -□□	88	33	146	45	21	129.6	None	162.0
WH145-33-M2 -□□	88	33	146	69.2	21	51.5	AA x 2	180.5
WH145-33-M3 -□□	88	33	146	69.2	21	36.5	AA x 3	181.5
WH170-25-N -□□	95	25	171	51	13	154.4	None	169.0
WH170-25-M4 -□□	95	25	171	73.2	13	54.8	AA x 4	195.0
WH170-33-N -□□	95	33	171	50.9	21	150.7	None	191.0
WH170-33-M4 -□□	95	33	171	73.2	21	54.8	AA x 4	220.0
WH190-25-N -□□	126	25	191	81	13	170.3	None	226.0
WH190-25-M6 -□□	126	25	191	107.6	13	72.6	AA x 6	276.0
WH190-33-N -□□	126	33	191	81	21	170.3	None	252.0
WH190-33-M6 -□□	126	33	191	107	21	72.3	AA x 6	307.0

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

NMG series**NEODYMIUM MAGNET****Round magnet**

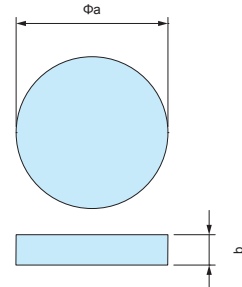
■ DXF/DWG/PDF drawings available on our website.



- Material / Finish: Neodymium / Nickel plated
- Please attach using a strong adhesive.

Product no. / Details

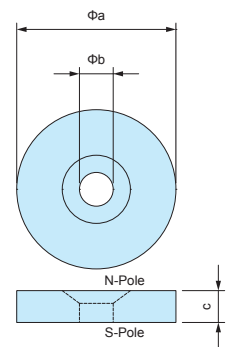
Product no.	a	b	Weight (g)	Flux Density	Absorption
NMG3-15N	15	3	4	214.4 mT	2.44 kgf
NMG3-20N	20	3	7.1	170.7 mT	3.26 kgf
NMG5-22N	22	5	11.4	247.2 mT	5.91 kgf
NMG5-25N	25	5	18.4	221.9 mT	6.89 kgf

NMG dimensions**Round magnet with countersunk hole**

- Please fasten with a screw.

**Product no. / Details**

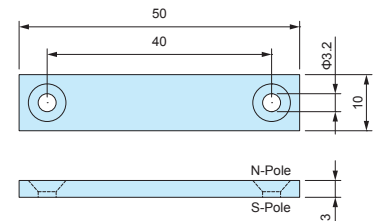
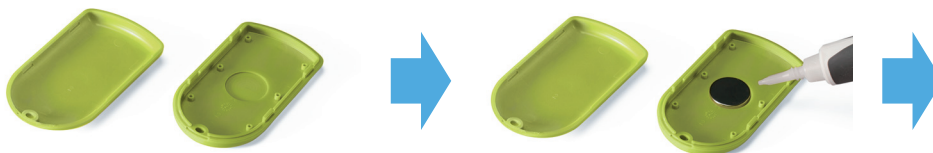
Product no.	a	b	c	Countersunk size	Weight (g)	Flux Density	Absorption
NMG3-15M3	15	3.2	3	M3	3.8	214.3 mT	2.33 kgf
NMG3-20M3	20	3.2	3	M3	6.9	170.6 mT	3.17 kgf
NMG5-22M4	22	4.3	5	M4	13.7	247.2 mT	5.68 kgf
NMG5-25M5	25	5.3	5	M5	17.6	221.9 mT	6.58 kgf

**Rectangular magnet with countersunk holes**

- Please fasten with a screw.

**Product no. / Details**

Product no.	a	b	c	Countersunk size	Weight (g)	Flux Density	Absorption
NMG3-50M3	50	10	3	M3	11.3	210.0 mT	9.1 kgf

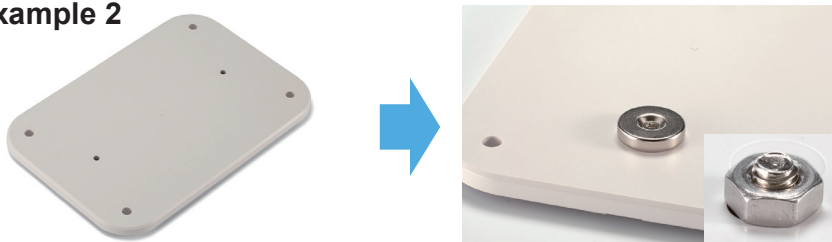
**Example 1** The magnetic force remains strong even through plastic.

Make recessed pocket on the inside wall.

Glue on.



Attach onto a metallic surface.

Example 2

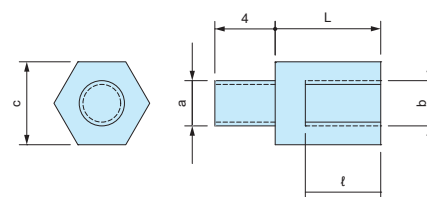
Make holes

Fasten with a screw and nut.



Attach onto a metallic surface.

CAUTION: Handle with care to avoid personal injury or damage to the magnet.

TPS series**TAPPING STANDOFF**

■ Tapping screw head allows for easy installation onto existing enclosure boss mount.

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

■ 4 different sizes available : M2.3, M2.6, M3 and M4 size.

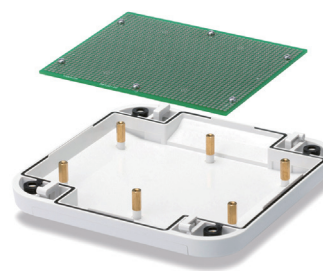
Product no. / Details

■ Material / Finish : Brass / Unfinished

Product no.	Screw size (a)	Screw size (b)	c	L	ℓ	Weight (g)	Pack of	Suitable models
TPS-M2.3-4	2.3	M2.3	5	4	3	0.7	4	WH series • PFE series LC • LCE • LCS • LCT series PF • PFF series (M2.3 boss models) TW • TWN • TWF series (M2.3 boss models) WP series (M2.3 boss models)
TPS-M2.3-5	2.3	M2.3	5	5	3	0.9	4	
TPS-M2.3-6	2.3	M2.3	5	6	4	1	4	
TPS-M2.3-7	2.3	M2.3	5	7	5	1.2	4	
TPS-M2.3-8	2.3	M2.3	5	8	6	1.3	4	
TPS-M2.3-10	2.3	M2.3	5	10	6	1.7	4	
TPS-M2.3-12	2.3	M2.3	5	12	6	2	4	PF • PFF series (M2.6 boss models) WP series (M2.6 boss models)
TPS-M2.6-4	2.6	M2.6	5	4	3	0.7	4	
TPS-M2.6-5	2.6	M2.6	5	5	3	0.8	4	
TPS-M2.6-7	2.6	M2.6	5	7	5	1.1	4	
TPS-M2.6-10	2.6	M2.6	5	10	6	1.6	4	SU • OP TWS • TW • TWN • TWF series (M3 boss models)
TPS-M2.6-12	2.6	M2.6	5	12	6	2	4	
TPS-M3-4	3	M3	5.5	4	3	0.8	4	
TPS-M3-5	3	M3	5.5	5	3	1.1	4	
TPS-M3-6	3	M3	5.5	6	4	1.2	4	
TPS-M3-7	3	M3	5.5	7	5	1.3	4	
TPS-M3-8	3	M3	5.5	8	5	1.6	4	BCAS • BCAP • BCPC • BCPK series (M4 boss models) BCAR • BCPR series (M4 boss models) SPCP • SPCM • WG • WGV • WGPC
TPS-M3-10	3	M3	5.5	10	6	1.9	4	
TPS-M3-12	3	M3	5.5	12	6	2.3	4	
TPS-M4-6	4	M4	7	6	4	2	4	
TPS-M4-10	4	M4	7	10	6	3.1	4	
TPS-M4-15	4	M4	7	15	8	4.7	4	
TPS-M4-20	4	M4	7	20	10	6.5	4	



■ Please use a suitable sized socket driver to both secure and loosen the tapping standoff.

Installation example**MT** series**PCB MOUNTING SCREWS for TPS**

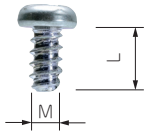
■ Pan head PCB mounting Screws for TPS tapping standoffs.

Product no. / Details

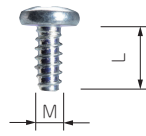
Product no.	M	L	Material	Finish	Pack of
MT2.3-4	2.3	4	Steel	Trivalent chromate	20
MT2.3-6	2.3	6	Steel	Trivalent chromate	20
MT2.6-4	2.6	4	Steel	Trivalent chromate	20
NEW MT2.6-6	2.6	6	Steel	Trivalent chromate	20
MT3-4	3	4	Steel	Trivalent chromate	20
NEW MT3-6	3	6	Steel	Trivalent chromate	20
NEW MT4-4	4	4	Steel	Trivalent chromate	20
NEW MT4-6	4	6	Steel	Trivalent chromate	20

EM series**PCB MOUNTING SCREW**

Pan head



Bind head



- Self-tapping screws for mounting PCB on bosses or standoffs.
- EM-3-6 self-tapping screws are suitable for mounting 1.6mm or thicker PCB.

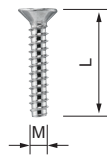
Product no. / Details

■ Material / Finish : Steel / Trivalent chromate

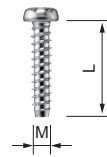
Product no.	M	L	Head type	Suitable models	Pack of
EM-1.6	1.6	4	Pan	SMW • CSS • CS SIC • SIM • WC • PS (M1.6 boss models)	50
EM-2	2	5	Pan	PS • TW • TWN • TWF SIC • SIM • PF • WC • WP (M2 boss models)	50
NEW EM-B2	2	5	Bind	SIC • SIM (M2 boss models) SIC • SIM6-12-□ (when installing PCB46-101)	50
EM-2.3	2.3	6	Pan	DRC • WH • LC • LCT • LCS • LCE • PFE WSC (Top cover bosses) PF • PFF (M2.3 boss models) TW • TWN • TWF (M2.3 boss models) WP (M2.3 boss models)	50
EM-2.3-8	2.3	8	Pan	WSC (Bottom base bosses)	50
EM-2.6	2.6	6	Pan	PF • PFF • WP (M2.6 boss models)	50
EM-3	3	5	Pan	SU • OP	50
EM-3-6	3	6	Pan	TWS • TW • TWN • TWF (M3 boss models)	50

MR series**TORX SCREW**

Flat head



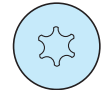
Pan head



With pin



★ Without pin



- Self-tapping torx screws for securing of the enclosure.

★ : MR1.6-6S, MR2.6-10□, MR3-5Z□ and MR3-14□ are without pin.

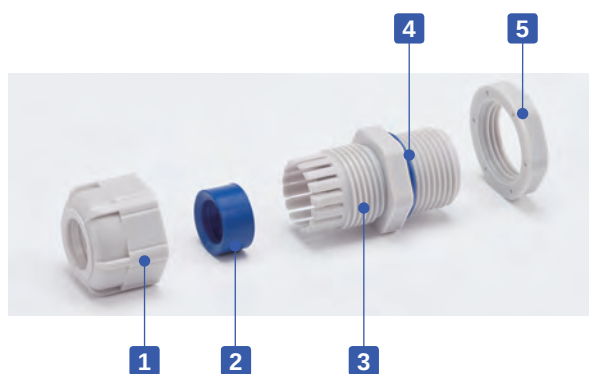
Product no. / Details

★ Mark = Without pin

Product no.	M	L	Head no.	Head style	Material	Finish	Suitable models	Pack of
MR1.6-6S★	1.6	6	T3	Pan	Steel	Nickel plated	CSS • CS	20
MR2.5-8PS	2.5	8	T8	Pan	Steel	Nickel plated	PF • PFE • PFF (M2.5 size)	20
MR2.6-10S★	2.6	10	T8	Flat	Steel	Nickel plated	TW • TWN (M2.6 size)	20
MR2.6-10B★	2.6	10	T8	Flat	Steel	Black trivalent chromate	TWF (M2.6 size)	20
MR2.6-12PS	2.6	12	T8	Pan	Steel	Nickel plated	MX • MXA • MXB • MXF (M2.6 size)	20
MR2.6-14PS	2.6	14	T8	Pan	Steel	Nickel plated	LCT • LCS • LC115-F2 / F3 LCT • LCS • LC145S-F6	20
MR2.6-14S	2.6	14	T8	Flat	Steel	Nickel plated	LCT • LCS • LC115H-F2 / F3 / M2 / 9V LCT • LCS • LC135-F4 / M2 / M3 / 9V LCT • LCS • LC135H-F4 / M2 / M3 / 9V LCT • LCS • LC145-F6 / M2 / M4 LCT • LCS • LC145H-F6 / M2 / M4 LCT • LCS • LC165-M4 LCT • LCS • LC165H-M4	20
MR2.6-18S	2.6	18	T8	Flat	Steel	Nickel plated	LCT • LCS • LC115-N / F2 / F3 LCT • LCS • LC145S-F6 / 145S-N LCE115-N TW • TWN7-2-11 / 7-4-11 / 7-5-11 TWF7-2-11 / 7-4-11 / 7-5-11 / 8-2-8 / 8-4-8	20
MR-1S	3	5	T10	Flat	Steel	Nickel plated	LCT • LCS • LC115H-N / F2 / F3 / M2 / 9V LCT • LCS • LC135-N / F4 / M2 / M3 / 9V LCT • LCS • LC135H-N / F4 / M2 / M3 / 9V LCT • LCS • LC145-N / F6 / M2 / M4 LCT • LCS • LC145H-N / F6 / M2 / M4 LCT • LCS • LC165-N / M4 LCT • LCS • LC165H-N / M4 LCE115H-N • LCE135-N • LCE145H-N • LCE165H-N	20
MR-1B	3	5	T10	Flat	Steel	Black trivalent chromate	UC	20
MR3-5ZS★	3	5	T10	Slotted raised countersunk	Steel	Nickel plated	FC • HY • HYR • HYRH (M3 size)	20
MR3-5ZB★	3	5	T10	Flat	Steel	Black trivalent chromate	CF	20
MR3-8PS	3	8	T10	Pan	Steel	Nickel plated	PF • PFE • PFF (M3 size)	20
MR3-14S★	3	14	T10	Flat	Steel	Nickel plated	TW • TWN (M3 size)	20
MR3-14B★	3	14	T10	Flat	Steel	Black trivalent chromate	TWF (M3 size) MX • MXA • MXB • MXF (M3 size)	20



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.
- IP67 protection class.

Components

■ PA = Polyamide

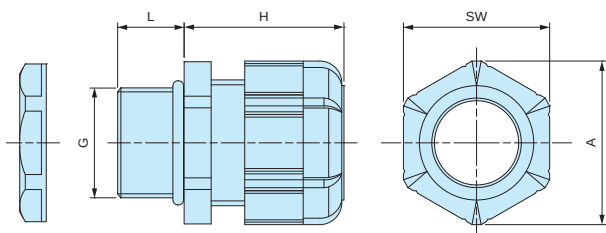
No.	Part name	Material
1	Cap	PA66 UL94V-2
2	Sealing insert	Silicone
3	Connector	PA66 UL94V-2
4	O-ring	Silicone
5	Lock nut	PA66 UL94V-2

RMW dimensions

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

Technical Data

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



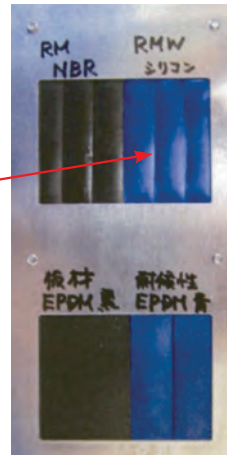
- Lock nut is not included for RMW10S-6.
- Please drill a proper thread hole into the enclosure for installation.

Product no. / Dimensions

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

RMW series silicone sealing insert weatherproof test report

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



Before



After

Testing conditions

Equipment : 7.5kW Super Xenon Weather Meter SX75 (Suga Test Instruments Co., Ltd.- <http://www.sugatest.co.jp/english/>)
Conditions : JIS B7754 : 1991

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

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

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

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

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

Time period :

Total radiant exposure : 1296MJ/m^2

Test result (visual / touch inspection)

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

Before



After



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

Before



After

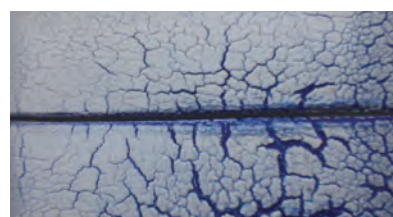


EPDM material from weatherproof cable gland of another manufacturer : Cracked, color drastically faded and powder appeared on the surface.

Before



After





- 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.

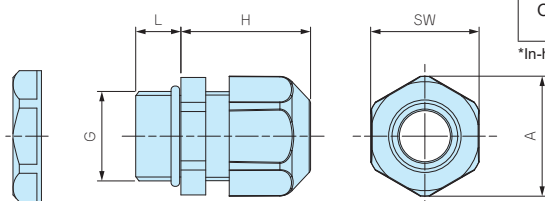
Components

■ 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.

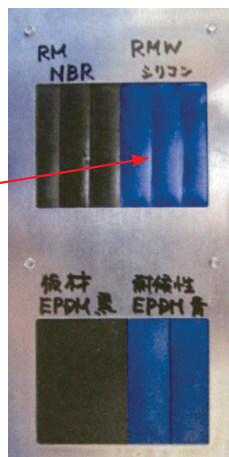
Please drill a proper thread hole into the enclosure for installation.

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)
Time period : 2,000 hours (equivalent to a period of 4 years under natural conditions)
Total radiant exposure : 1296MJ/m^2

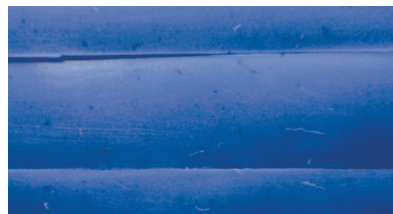
Test result (visual / touch inspection)

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

Before



After

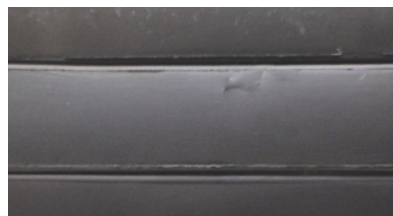


NBR material from our RM series : Lost glossiness on the surface and material is stiffened.

Before

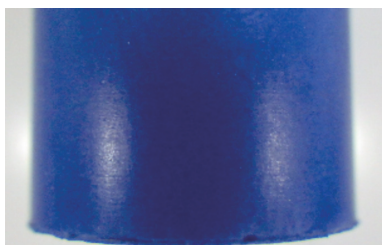


After

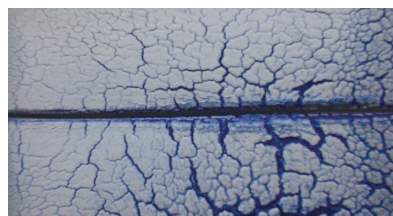


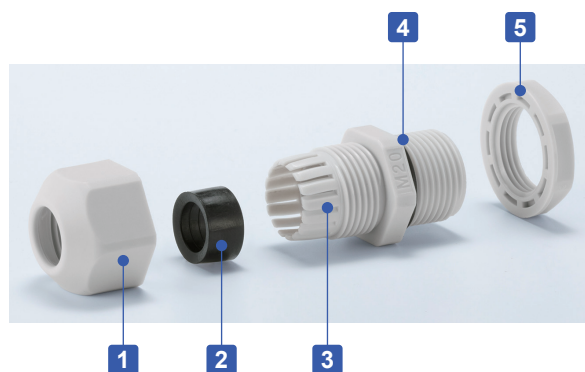
EPDM material from weatherproof cable gland of another manufacturer : Cracked, color drastically faded and powder appeared on the surface.

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 : $-20^{\circ}\text{C} \sim +80^{\circ}\text{C}$

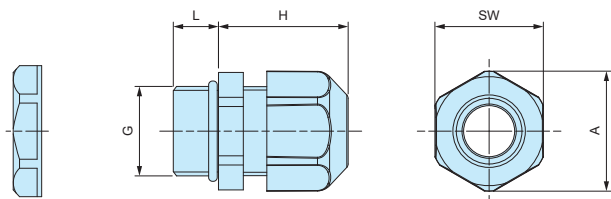
*In-house test

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.

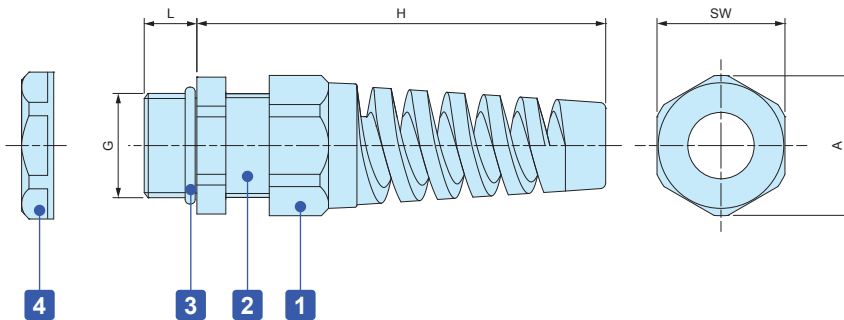
Technical Data

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

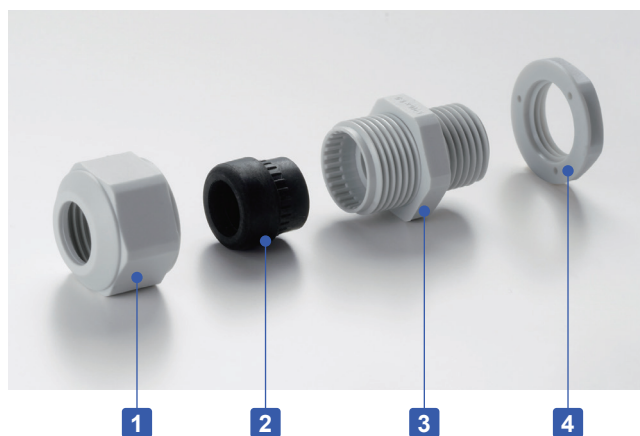
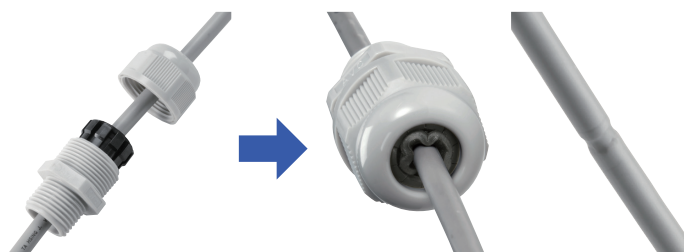
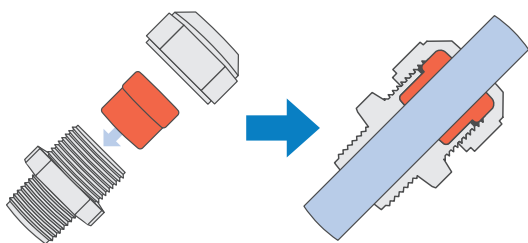
Protection class : IP68 1bar / 30min
 Operating temperature : -20°C ~ $+100^{\circ}\text{C}$
 Compliant with EN50262 Ver. A

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.

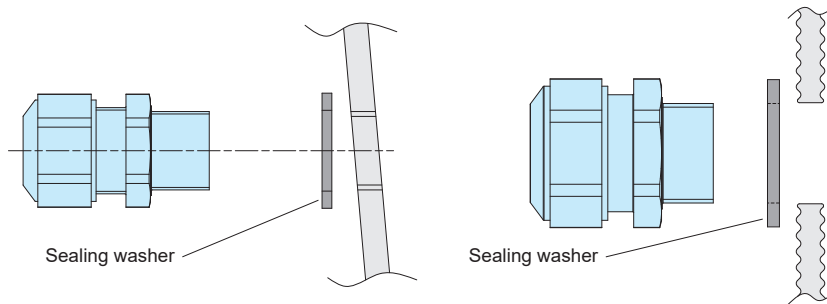
- Appropriate tightening torque varies by each cable diameter. Tighten the cap until top of the sealing insert forms a small bead between the cap and the cable.



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

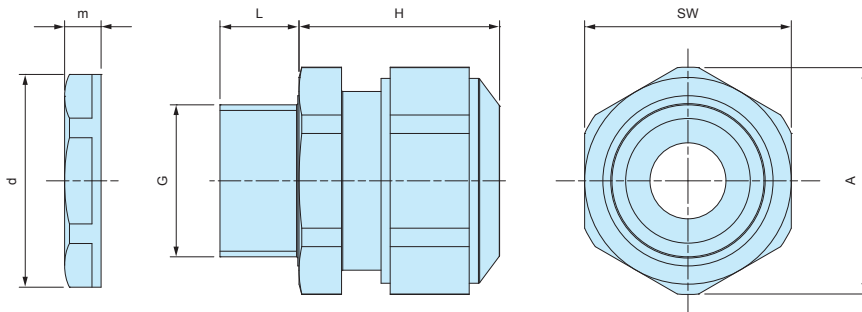
■ An optional sealing washer is required when installing on an uneven surface. (See website for more information on the optional sealing washer AGP series)

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

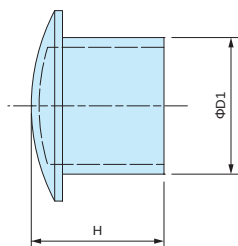
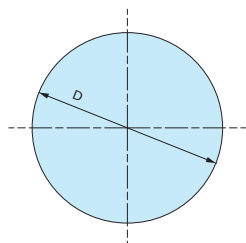
Product no.		G		Cable range		L	H Max	SW	A	d	m	Pack of
● Black	● Light gray	Thread size	Mounting hole	Min	Max							
AG8-3.5B	AG8-3.5S	M8×1.0	—	2.5	3.5	10	17	12	13.2	—	—	1
AG8-5B	AG8-5S	M8×1.0	—	3.5	4.7	10	17	12	13.2	—	—	1
AG10-6B	AG10-6S	M10×1.0	—	4	6	10	19	15	16.5	—	—	1
AG12-5B	AG12-5S	M12×1.5	Φ12.2	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

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

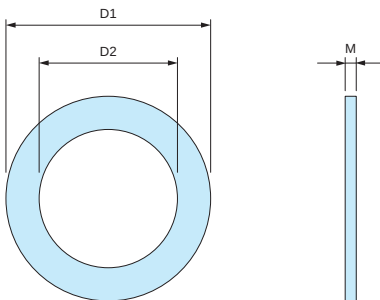
AGP SERIES

SEALING WASHER for AG • AGSP

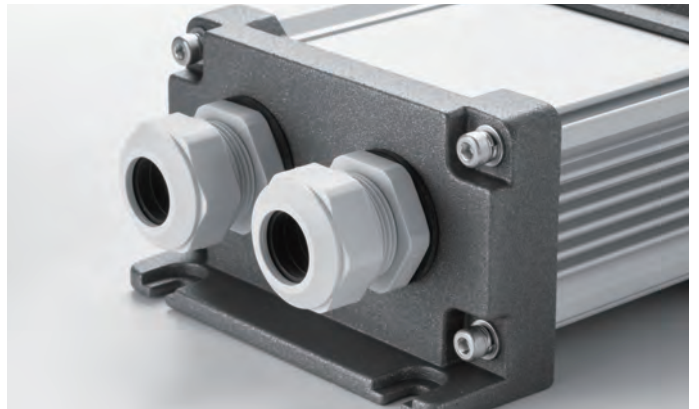


- Sealing washer for AG series.
- Made from oil resistant NBR material.
- Use in the case of installation on a rough or uneven surfaces.
- Selectable in 7 sizes (from M12 to M50)
- Sealing washer is not necessary for installation on flat surfaces.

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