

PROTECTION CLASS (IP RATING)

IP67
is

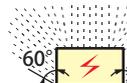
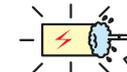
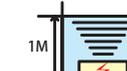
● IEC60529 standard is a system for classifying the degrees of protection provided by the enclosures of electrical equipment, such as against dust and water.

IP

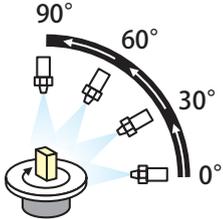
First digit : Solid particle protection

Second digit: Liquid ingress protection

| No. | Protection against ingress of solid foreign objects | Protection against access to hazardous parts |
|----------|---|---|
| 0 | No Protection | No Protection |
| 1 |  Protected against solid objects over 50mm. |  Protected against accidental touch by a large surface of the body, such as by hands. (Tested with a 50mm diameter steel ball.) |
| 2 |  Protected against solid objects over 12.5mm. |  Protected against accidental touch by fingers or similar objects (Tested with a 12mm diameter, 80mm long articulated finger) |
| 3 |  Protected against solid objects over 2.5mm. |  Protected against accidental touch by tools or thick wires. (Tested with a 2.5mm diameter, 100mm long bar) |
| 4 |  Protected against solid objects over 1.0mm. | |
| 5 |  Protected against dust; limited ingress, no harmful deposits. |  Protected against accidental touch by most wires and screws. (Tested with a 1.0mm diameter, 100mm long wire) |
| 6 |  Complete protection against dust. | |

| No. | Protection against ingress of liquid |
|----------|--|
| 0 | No Protection |
| 1 |  Dripping water (vertically falling drops) for 10 minutes. |
| 2 |  Vertically dripping water when tilted at 15° for 10 minutes (2.5 minutes per position). |
| 3 |  Spraying water (at any angle) of 0.07ℓ/min up to 60° from the vertical for 10 minutes. |
| 4 |  Spraying water of 0.07ℓ/min from all directions for 10 minutes. |
| 5 |  Jets of water projected by a φ6.3 nozzle of 12.5ℓ / min from all directions at 1 min / 1m ² for at least 3 minutes. |
| 6 |  Powerful jets of water projected by a φ12.3 nozzle of 100ℓ / min from all directions at 1 min / 1m ² for at least 3 minutes. |
| 7 |  Immersion, up to 1 meter depth (for 30 mins). |
| 8 |  Immersion (test depth and duration beyond IPX7 requirements) |

69K



80 to 100 barrel steam jets at 80°C (±5°C) from a 0°, 30°, 60°, and 90° angle, at a distance of 100 ~ 150mm for 30 sec x 5 sets

A point of note for Waterproof Boxes

- For outdoor use, direct sunlight will accelerate the degradation of the box. For more information, please see page Outdoor Use - 1.
- For customers planning to attach their own original mounting brackets onto the waterproof boxes, it is recommended to mill larger holes with enough clearance to attach the bracket. If the milled hole and clearance is too small, it may cause irreparable damage to the box.
- Waterproof boxes made of Polycarbonate or ABS plastic material may be damaged if certain types of washing chemicals, solvents, oils, or thread locking adhesives are present on the box. Furthermore, paint not suitable to be used on plastic materials may also cause damage.

IP68

HIGH PERFORMANCE

Outdoor Waterproof Box for 5G Technology!

WG series

WGPC series



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



*Do not use underwater/underground.



With a silicone waterproof gasket, and supported by multiple enclosing screws from the rear side, it allows the enclosure to maintain a stable high waterproofing capability.

Weather-resistant ASA material



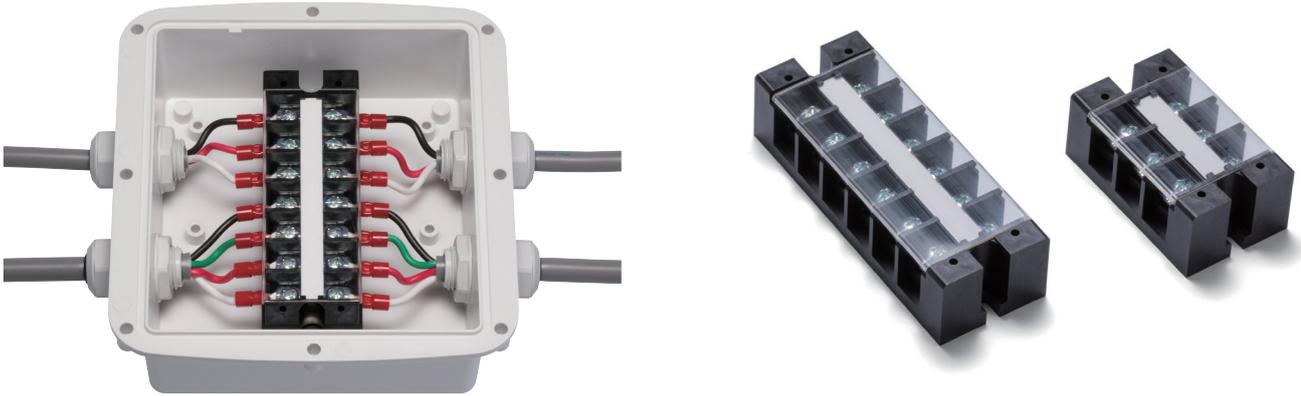
ASA material is resistant to deterioration and discoloration due to ultraviolet rays. Perfect for outdoor communication or network devices.

Captive screws for easy maintenance



There is no risk of screws dropping out and lost during maintenance. Captive screw is able to lock into a pre-drilled hole to provide a secure hold.

Optional terminal blocks compatible



Optional terminal blocks, WTB series can be installed onto the existing bosses inside the WG • WGPC and WGV series box without additional processing or customization, hence can also function as a terminal junction box. (See page 115~116 for WTB terminal blocks.)

Easy installation on walls & poles

WALL MOUNTING BRACKET



POLE MOUNTING BRACKET



POLE MOUNTING STRAP



WG series

IP68 WATERPROOF ASA BOX



WGPC series

IP68 WATERPROOF PC+ASA BOX



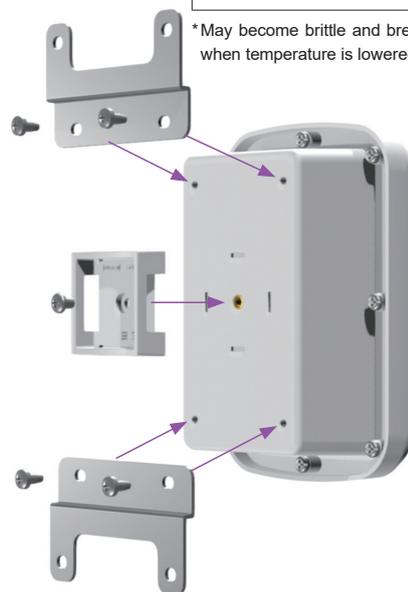
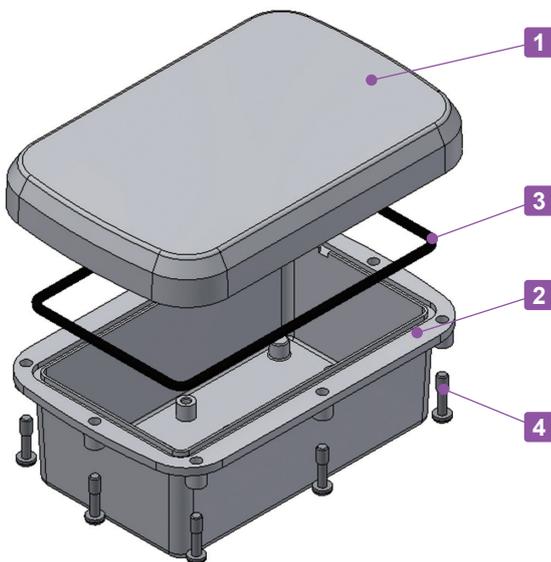
- IP68 high performance plastic box protected from immersion as long as 24 hours at 1m depth.
- ASA material is resistant to deterioration and discoloration from ultraviolet rays. PC/ASA material provides superior heat resistance and flame retardancy. Perfect for use as outdoor communication or network devices.
- Self-tapping captive screws which are able to lock into a pre-drilled hole and provide a secure hold for fastening the cover. Please drive the self-tapping captive screws for cutting a thread into the holes at first so that the cover and body can be secured together properly.



Technical Data

Protection class :
IP68 (24-hours/1m-depth)
Operating temperature :
WG : -30°C ~ +60°C
WGPC : -30°C ~ +75°C
Recommended torque :
0.5 ~ 0.7N · m

*May become brittle and break under impact when temperature is lowered close to -30°C.



There are 5 holes on the backside of the body (4 at each corner, 1 in center). 4 corner holes are for wall mounting bracket, and 1 center hole is for pole mounting bracket.

WG Components

| No. | Part name | Pcs | Material / Color |
|-----|----------------------------|--------|------------------------------|
| 1 | Cover | 1 | ASA UL94HB / Off-white |
| 2 | Body | 1 | ASA UL94HB / Off-white |
| 3 | Gasket | 1 | Silicone / Black |
| 4 | Self-tapping captive screw | 8 ~ 10 | Stainless steel / Unfinished |

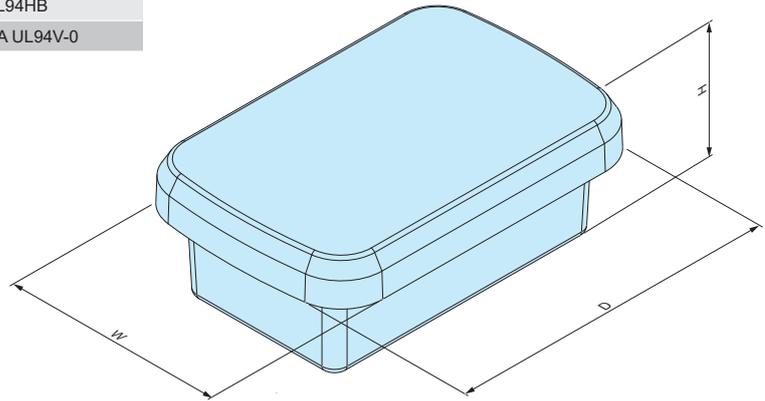
WGPC Components

| No. | Part name | Pcs | Material / Color |
|-----|----------------------------|--------|------------------------------|
| 1 | Cover | 1 | PC/ASA UL94V-0 / Light gray |
| 2 | Body | 1 | PC/ASA UL94V-0 / Light gray |
| 3 | Gasket | 1 | Silicone / Black |
| 4 | Self-tapping captive screw | 8 ~ 10 | Stainless steel / Unfinished |

Color

| Series | Code | Color | Material |
|--------|------|------------|----------------|
| WG | W | Off-White | ASA UL94HB |
| WGPC | G | Light gray | PC/ASA UL94V-0 |

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



Product no. / Details

| Product no. | External dimensions | | | Weight (g) |
|------------------------|---------------------|-----|-----|------------|
| | W | D | H | |
| WG10-15- 6W | 100 | 150 | 55 | 169.5 |
| WG10-15- 8W | 100 | 150 | 75 | 192 |
| WG15-16- 6W | 145 | 155 | 55 | 232 |
| WG15-16- 8W | 145 | 155 | 80 | 266.5 |
| WG15-21- 6W | 145 | 210 | 60 | 314 |
| WG15-21- 9W | 145 | 210 | 90 | 367 |
| WG17-25- 8W | 170 | 250 | 80 | 470 |
| WG17-25-11W | 170 | 250 | 110 | 534 |
| WG23-25- 8W | 225 | 245 | 80 | 570 |
| WG23-25-11W | 225 | 245 | 110 | 645 |
| NEW WG25-33- 9W | 245 | 325 | 90 | 965 |
| NEW WG25-33-12W | 245 | 325 | 120 | 1,073 |
| NEW WG30-33- 9W | 300 | 325 | 90 | 1,151 |
| NEW WG30-33-13W | 300 | 325 | 130 | 1,285.5 |
| NEW WG28-40-10W | 280 | 400 | 100 | 1,332.5 |
| NEW WG28-40-15W | 280 | 400 | 150 | 1,529.5 |

Product no. / Details

| Product no. | External dimensions | | | Weight (g) |
|--------------------------|---------------------|-----|-----|------------|
| | W | D | H | |
| NEW WGPC10-15- 6G | 100 | 150 | 55 | 188.5 |
| NEW WGPC10-15- 8G | 100 | 150 | 75 | 213.5 |
| NEW WGPC15-16- 6G | 145 | 155 | 55 | 258 |
| NEW WGPC15-16- 8G | 145 | 155 | 80 | 296.5 |
| NEW WGPC15-21- 6G | 145 | 210 | 60 | 349.5 |
| NEW WGPC15-21- 9G | 145 | 210 | 90 | 408.5 |
| NEW WGPC17-25- 8G | 170 | 250 | 80 | 523 |
| NEW WGPC17-25-11G | 170 | 250 | 110 | 594 |
| NEW WGPC23-25- 8G | 225 | 245 | 80 | 634 |
| NEW WGPC23-25-11G | 225 | 245 | 110 | 717.5 |
| NEW WGPC25-33- 9G | 245 | 325 | 90 | 1,073.5 |
| NEW WGPC25-33-12G | 245 | 325 | 120 | 1,193.5 |
| NEW WGPC30-33- 9G | 300 | 325 | 90 | 1,280 |
| NEW WGPC30-33-13G | 300 | 325 | 130 | 1,430 |
| NEW WGPC28-40-10G | 280 | 400 | 100 | 1,482 |
| NEW WGPC28-40-15G | 280 | 400 | 150 | 1,701 |

Accessories (Optional parts)



Wall mounting bracket WGF series
See page 112



Pole mounting bracket WGMB • WPMB • SSK series
See page 113 ~ 114 and 205 ~ 206



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



Tapping Standoff TPS series
See page 397



Mounting plate WGP series
See page 111



PCB mounting screw MT4-8T
See page 112



Terminal block WTB series
See page 115



DIN Rail FDR series
See page 97



Protective vent PMF series
See page 197 ~ 198



Cable gland
See page 181 ~ 193



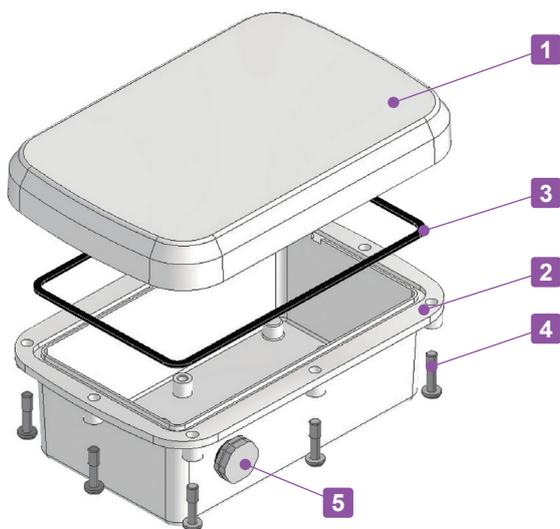
- IP68 high performance plastic box protected from immersion as long as 24 hours at 1m depth where external (surroundings) and internal (inside box) pressure are different.
- ASA material is resistant to deterioration and discoloration from ultraviolet rays. Perfect for use as outdoor communication or network devices.
- Self-tapping captive screws which are able to lock into a pre-drilled hole and provide a secure hold for fastening the cover. Please drive the self-tapping captive screws for cutting a thread into the holes at first so that the cover and body can be secured together properly.



| Technical Data | |
|---------------------------------------|--------------------------|
| Protection class : | IP68 (24-hours/1m-depth) |
| Operating temperature : | -30°C ~ +60°C |
| Recommended torque : | 0.5 ~ 0.7N • m |
| Ventilation plug recommended torque : | 0.6 ~ 0.8N • m |

*May become brittle and break under impact when temperature is lowered close to -30°C.

Ventilation plug protects the enclosure from deformation by equalizing pressure in environments where there are differences between strong daytime and low nighttime temperatures, as well as venting the gas generated within.

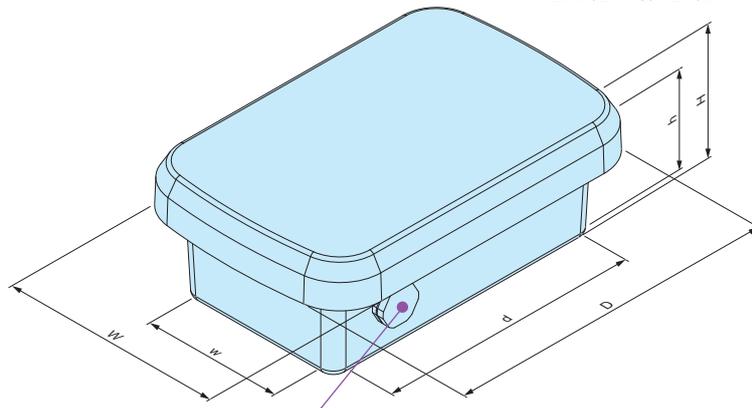


Components

| No. | Part name | Pcs | Material / Color |
|-----|----------------------------|--------|--------------------------------|
| 1 | Cover | 1 | ASA UL94HB / Off-white |
| 2 | Body | 1 | ASA UL94HB / Off-white |
| 3 | Gasket | 1 | Silicone / Black |
| 4 | Self-tapping captive screw | 8 ~ 10 | Stainless steel / Unfinished |
| 5 | Ventilation plug | 1 | PA66 + PA6 • PTFE / Light gray |

WGV dimensions

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



The location of the ventilation plug is pre-fixed.
*Customization for location change possible.

Product no. / Details

| Product no. | External dimensions | | | Internal dimensions | | | Screw | Weight (g) |
|-------------------------|---------------------|-----|-----|---------------------|-----|------|----------|------------|
| | W | D | H | w | d | h | | |
| WGV10-15- 6W | 100 | 150 | 55 | 58 | 115 | 43 | M4× 8pcs | 171 |
| WGV10-15- 8W | 100 | 150 | 75 | 57 | 114 | 63 | M4× 8pcs | 193.5 |
| WGV15-16- 6W | 145 | 155 | 55 | 102 | 120 | 43 | M4× 8pcs | 233.5 |
| WGV15-16- 8W | 145 | 155 | 80 | 100 | 118 | 68 | M4× 8pcs | 268 |
| WGV15-21- 6W | 145 | 210 | 60 | 102 | 174 | 48 | M4×10pcs | 315.5 |
| WGV15-21- 9W | 145 | 210 | 90 | 100 | 172 | 78 | M4×10pcs | 368.5 |
| WGV17-25- 8W | 170 | 250 | 80 | 125 | 209 | 67.5 | M4×10pcs | 471.5 |
| WGV17-25-11W | 170 | 250 | 110 | 122 | 206 | 97.5 | M4×10pcs | 535.5 |
| WGV23-25- 8W | 225 | 245 | 80 | 180 | 194 | 67.5 | M4×10pcs | 571.5 |
| WGV23-25-11W | 225 | 245 | 110 | 177 | 191 | 97.5 | M4×10pcs | 646.5 |
| NEW WGV25-33- 9W | 245 | 325 | 90 | 189 | 268 | 74 | M4×10pcs | 966.5 |
| NEW WGV25-33-12W | 245 | 325 | 120 | 186 | 265 | 104 | M4×10pcs | 1,075.5 |
| NEW WGV30-33- 9W | 300 | 325 | 90 | 244 | 268 | 74 | M4×10pcs | 1,152.5 |
| NEW WGV30-33-13W | 300 | 325 | 130 | 240 | 264 | 114 | M4×10pcs | 1,288 |
| NEW WGV28-40-10W | 280 | 400 | 100 | 223 | 338 | 84 | M4×10pcs | 1,335 |
| NEW WGV28-40-15W | 280 | 400 | 150 | 218 | 333 | 134 | M4×10pcs | 1,532 |

Accessories (Optional parts)



Wall mounting bracket WGF series
See page 112



Pole mounting bracket WGMB • WPMB • SSK series
See page 113 ~ 114 and 205 ~ 206



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



Tapping Standoff TPS series
See page 397



Mounting plate WGP series
See page 111



PCB mounting screw MT4-8T
See page 112



Terminal block WTB series
See page 115



DIN Rail FDR series
See page 97



Protective vent PMF series
See page 197 ~ 198



Cable gland
See page 181 ~ 193

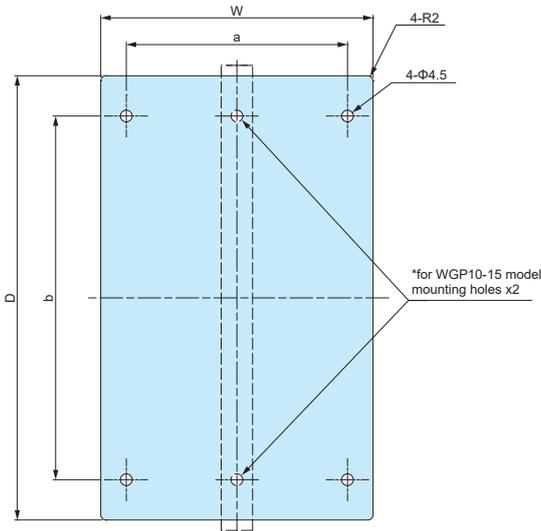
WGP series

MOUNTING PLATE for WG • WGPC • WGV



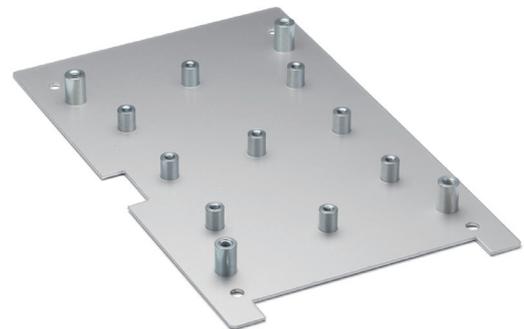
WGP dimensions

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



■ Material / Finish : A1100P (t=1.5mm) / Silver anodized

■ Hole milling, clinching spacer customizations are available. See page Custom-6 and our website for more details.



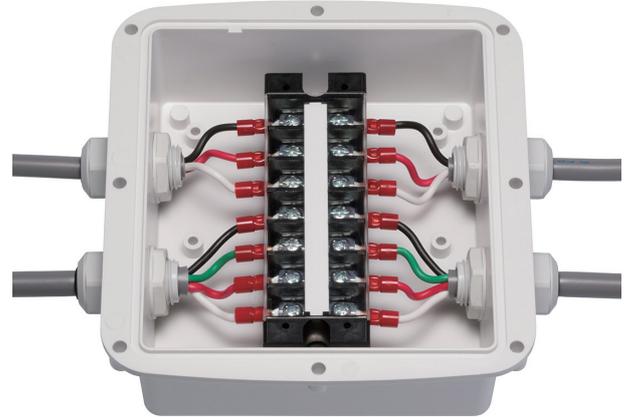
Product no. / Details

■ Mounting screws included.

| Product no. | W | D | a | b | Suitable models | Weight (g) |
|---------------------|-----|-----|------|-----|------------------------|------------|
| WGP10-15 | 60 | 112 | - | 97 | WG • WGPC • WGV10-15-□ | 30 |
| WGP15-16 | 105 | 117 | 84.5 | 90 | WG • WGPC • WGV15-16-□ | 54 |
| WGP15-21 | 104 | 171 | 84.5 | 140 | WG • WGPC • WGV15-21-□ | 76 |
| WGP17-25 | 120 | 200 | 100 | 176 | WG • WGPC • WGV17-25-□ | 100 |
| WGP23-25 | 175 | 185 | 152 | 168 | WG • WGPC • WGV23-25-□ | 133 |
| NEW WGP25-33 | 178 | 254 | 154 | 230 | WG • WGPC • WGV25-33-□ | 190 |
| NEW WGP30-33 | 232 | 254 | 208 | 230 | WG • WGPC • WGV30-33-□ | 247.5 |
| NEW WGP28-40 | 210 | 322 | 184 | 298 | WG • WGPC • WGV28-40-□ | 283 |

WTB series

TERMINAL BLOCK for WG • WGPC • WGV



- Compatible terminal blocks for WG • WGPC • WGV series.
- Not suitable for WG • WGPC • WGV25-33-□ ~ 28-40-□.

Components

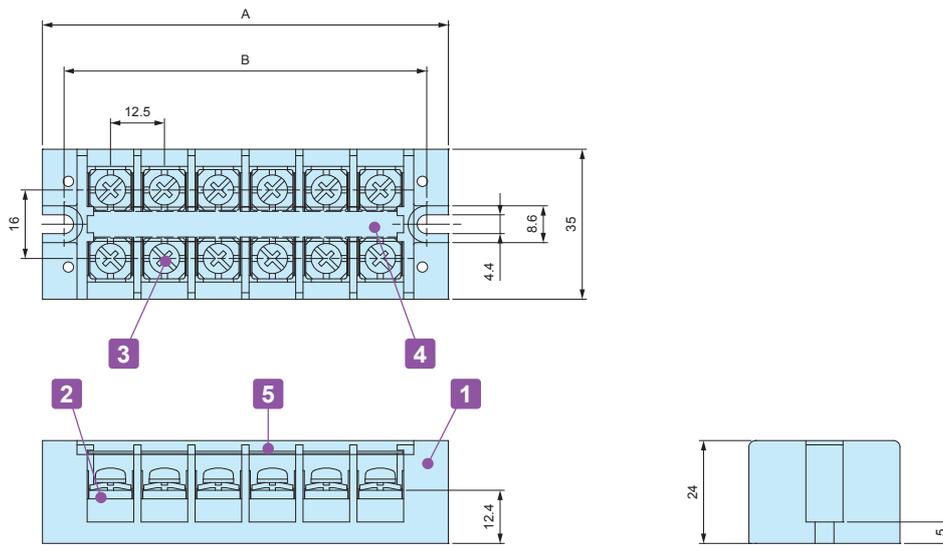
| No. | Part name | Pcs | Material | Color or Finish |
|-----|----------------------------|-------|-----------------------|--------------------|
| 1 | Base | 1 | PBT UL94V-0 | Black |
| 2 | Conductive plate | 1 | Brass | Nickel plated |
| 3 | Terminal screw (M4-10) | 2 x P | Steel | Trivalent chromate |
| 4 | Symbol board | 1 | PET | White |
| 5 | Cover | 1 | Polycarbonate UL94V-0 | Transparent |
| — | Screw (Bind tapping M4-10) | 2 | Steel | Trivalent chromate |

Specification

1. Electrical Rating 600V • 35A
2. Insulation Resistance DC500V 1000MΩ ~
3. Withstand Voltage AC2500V (Tested for 1 min.)
4. Rising Temp. 30°C or less
5. Operating Temp. Range -40°C ~ +90°C
6. Storage Temp. Range -40°C ~ +90°C

WTB dimensions

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



Product no. / Details

| Product no. | P (Number of poles) | A | B | Suitable models |
|----------------|---------------------|-------|-------|--|
| WTB-240- 3P-FB | 3 | 56.5 | 46.5 | WG • WGPC • WGV10-15-□ (W direction) |
| WTB-240- 6P-FB | 6 | 94.0 | 84.0 | WG • WGPC • WGV15-16-□, WG • WGPC • WGV15-21-□ (W direction) |
| WTB-240- 7P-FB | 7 | 106.5 | 96.5 | WG • WGPC • WGV10-15-□, WG • WGPC • WGV15-16-□ (D direction) WG • WGPC • WGV17-25-□ (W direction) |
| WTB-240-10P-FB | 10 | 144.0 | 134.0 | WG • WGPC • WGV15-21-□ (D direction) WG • WGPC • WGV23-25-□ (W direction) |
| WTB-240-12P-FB | 12 | 169.0 | 159.0 | WG • WGPC • WGV17-25-□, WG • WGPC • WGV23-25-□ (D direction) |

MT4-8T PCB MOUNTING SCREW



■ Self-tapping screws for board mounting on bosses inside WG, WGPC and WGV series enclosures.

Product no. / Details

| Product no. | Material | Finish | Pack of |
|----------------------------|----------|--------------------|---------|
| MT4-8T (Bind tapping M4-8) | Steel | Trivalent chromate | 20 |

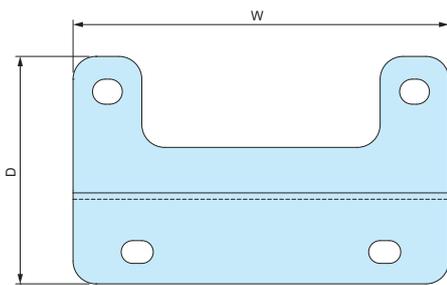
WGF series WALL MOUNTING BRACKET for WG • WGPC • WGV



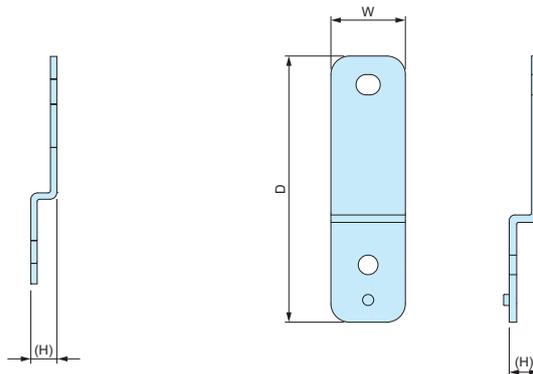
WGF dimensions

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

WGF-10 ~ WGF-25



WGF-L



Product no. / Details

■ Stainless steel mounting screws included.

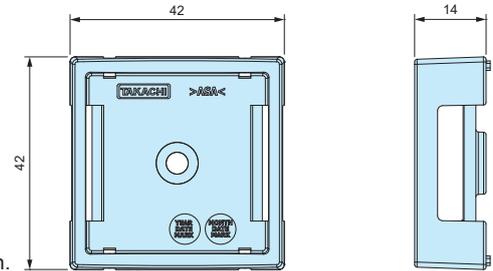
| Product no. | W | D | (H) | Suitable models | Material / Finish | Pack of |
|------------------|-----|----|-------|--|---|---------|
| WGF-10 | 82 | 50 | (5.8) | WG • WGPC • WGV10-15-□ (W direction) | Stainless steel t=1.5mm / Barrel finish | 2 |
| WGF-15 | 132 | 50 | (5.8) | WG • WGPC • WGV10-15-□ (D direction) | | 2 |
| | | | | WG • WGPC • WGV15-16-□ (W • D direction) | | |
| | | | | WG • WGPC • WGV15-21-□ (W direction) | | |
| | | | | WG • WGPC • WGV17-25-□ (W direction) | | |
| WGF-23 | 184 | 55 | (8.0) | WG • WGPC • WGV15-21-□ (D direction) WG • WGPC • WGV23-25-□ (W direction) | 2 | |
| WGF-25 | 210 | 55 | (8.0) | WG • WGPC • WGV17-25-□ (D direction) WG • WGPC • WGV23-25-□ (D direction) | 2 | |
| NEW WGF-L | 20 | 72 | (8.0) | WG • WGPC • WGV25-33-□ (W • D direction) WG • WGPC • WGV30-33-□ (W • D direction) WG • WGPC • WGV28-40-□ (W • D direction) | Stainless steel t=2.0mm / Barrel finish | 4 |

WGMB-1W POLE MOUNTING BRACKET for WG • WGPC • WGV



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

WGMB dimensions



- Pole mount bracket made from weather resistant ASA material.
 - Hole milling is not required when installing the mount bracket, thus allowing the enclosure to maintain its IP rating.
 - WG • WGPC • WGV10-15-□ and 15-16-□ can be installed in both the W or D direction.
 - Pole mount is possible with the use of SNB or PKB series mounting belt. (See website)
- * Operating temperature : -30°C ~ +60°C

Product no. / Details

■ Mounting stainless steel screw included.

| Product no. | Suitable models | Material / Color | Weight (g) | Pack of |
|-------------|---|------------------------|------------|---------|
| WGMB-1W | WG • WGPC • WGV10-15-□ / 1 pc required WG • WGPC • WGV15-16-□ / 1 pc required WG • WGPC • WGV15-21-□ / 2 pcs required | ASA UL94HB / Off-white | 9 | 1 |

Installation example

Installation (1 pc)



Installation (2 pcs)

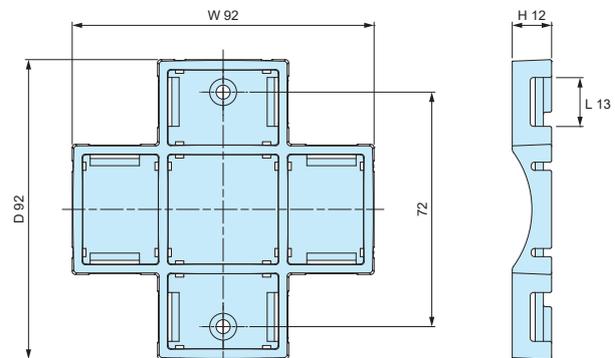


WPMB-M4-2G POLE MOUNTING BRACKET



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

WPMB-M4-2 dimensions



- Pole mount bracket made from weather resistant ASA material.
 - Pole mounting belt can be installed in either W or D direction.
 - Pole mount is possible with the use of PKB series mounting belt. (See page 208)
 - Hole milling is not required when installing the mount bracket, thus allowing the enclosure to maintain its protection class.
- *Stainless steel screw belt SNB series is not usable on WPMB-M4-2 series.
* Operating temperature : -30°C ~ +60°C

| Color |
|------------|
| White gray |

Product no. / Details

■ Mounting stainless steel screw included.

| Product no. | Suitable models | Recommended torque (N • m) | Weight (g) | Pack of |
|-------------|------------------------|----------------------------|------------|---------|
| WPMB-M4-2G | WG • WGPC • WGV15-21-□ | 0.45 ~ 0.5 | 24 | 1 |

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

WPMB series

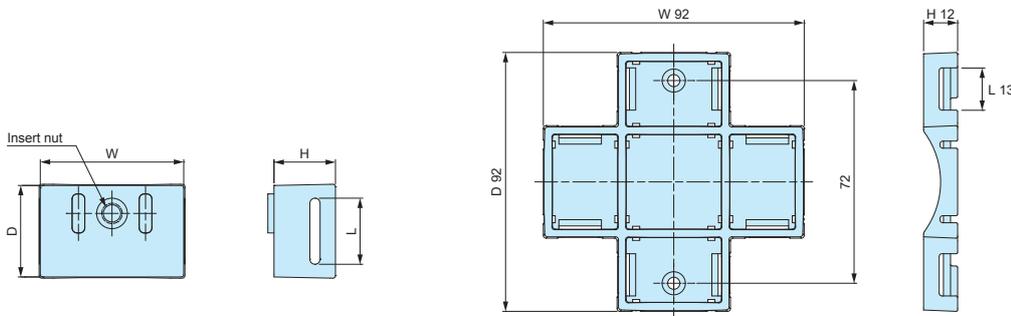
POLE MOUNTING BRACKET for WP



- Pole mount bracket made from weather resistant ASA material.
- Hole milling is not required when installing the mount bracket, thus allowing the enclosure to maintain its IP67 protection.
- WPMB-M4-2 can be used for both vertical and horizontal installation.
- Together with WPMB series, the PKB series mounting belt allows the unit to be mounted onto a pole.

WPMB dimensions

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



Color Type

| Code | Color |
|------|------------|
| G | White gray |
| D | Dark gray |

WPMB-M3 • WPMB-M4

WPMB-M4-2

Product no. / Details

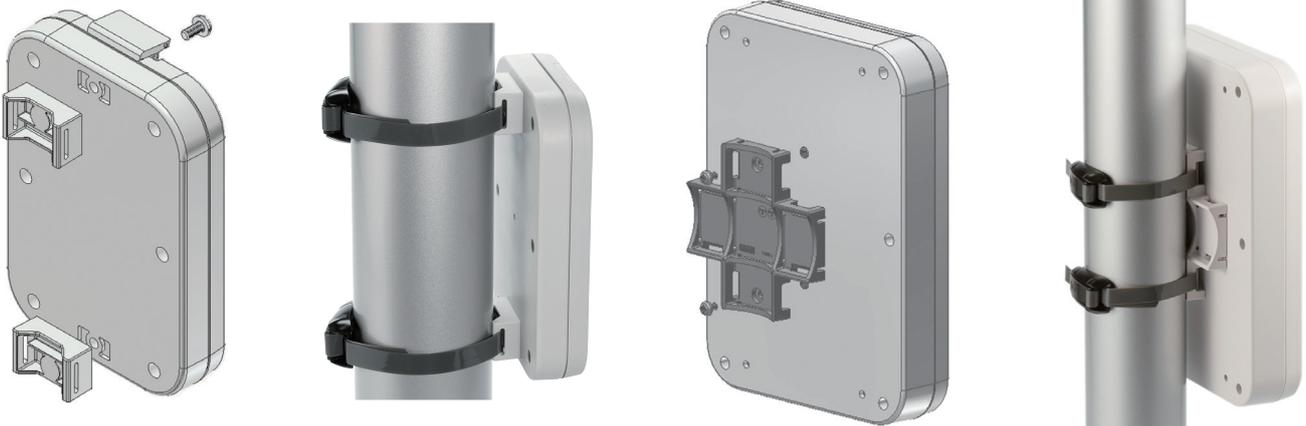
■ Please suffix color code at the end of the product number.

| Product no. | Dimensions | | | | Screw | Suitable models | Recommended torque (N • m) | Weight (g) | Pack of |
|-------------|------------|----|-----|----|---------------------------------|---|----------------------------|------------|---------|
| | W | D | H | L | | | | | |
| WPMB-M3□ | 18 | 14 | 9.5 | 11 | Stainless steel M3-6 x 2 pcs | WP5-7-2 • 5-7-3 • 6-8-2 • 6-8-3 • 8-8-2 • 8-8-4 • 8-10-2 • 8-10-4 | 0.4 ~ 0.45 | 3 | 2 |
| WPMB-M4□ | 28 | 18 | 12 | 13 | Stainless steel M4-8 x 2 pcs | WP9-13-3 • 9-13-4 • 10-10-3 • 10-10-4 • 11-15-3 • 11-15-4 • 13-18-3 • 13-18-5 | 0.45 ~ 0.5 | 10 | 2 |
| WPMB-M4-2□ | 92 | 92 | 12 | 13 | Stainless steel M4-6 x 2 pcs | WP15-15-4 • 15-15-6 • 15-21-4 • 15-21-6 • 20-20-5 • 20-20-7 • 20-28-5 • 20-28-7 | 0.45 ~ 0.5 | 24 | 1 |

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

WPMB-M3 / WPMB-M4

WPMB-M4-2



ECONOMICAL OUTDOOR NETWORK BOX

Unique construction rainproof box

OB series

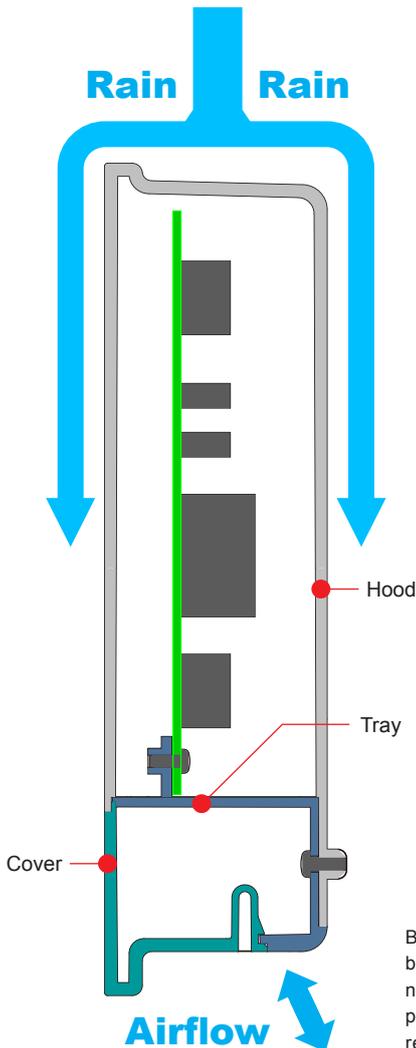
REASONS for ECONOMICAL

1. No Gasket required by the unique construction
2. Wall/Pole bracket integrated



Unique seamless construction

No rain entry by the seamless construction without gasket nor joint.



By having a slight gap between the cover and tray, no ventilation plug for the pressure equalization is required.

Wall • Pole mounting bracket integrated

The slit of the integrated bracket in the backside can hold the pole mounting belts. And the hanging holes can be utilize for wall mounting.



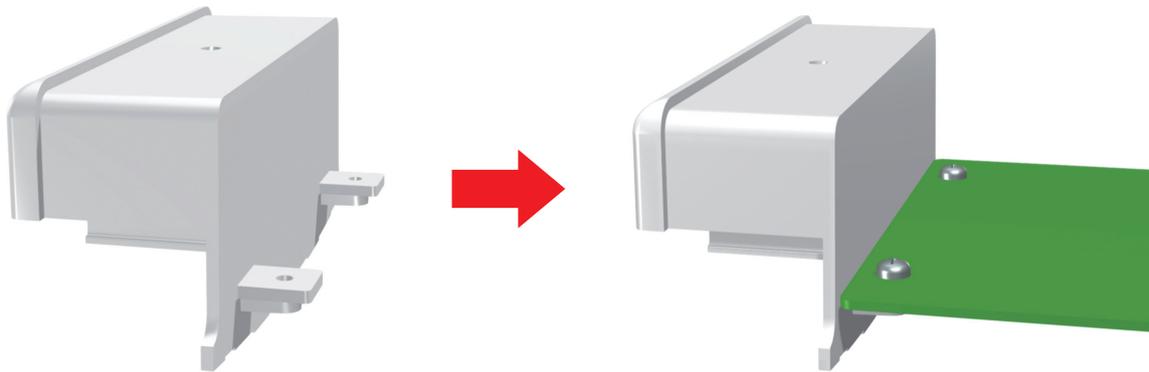
Weather-resistant ASA material

ASA material is resistant to deterioration and discoloration from ultraviolet rays. Perfect for use as outdoor communication or network devices.

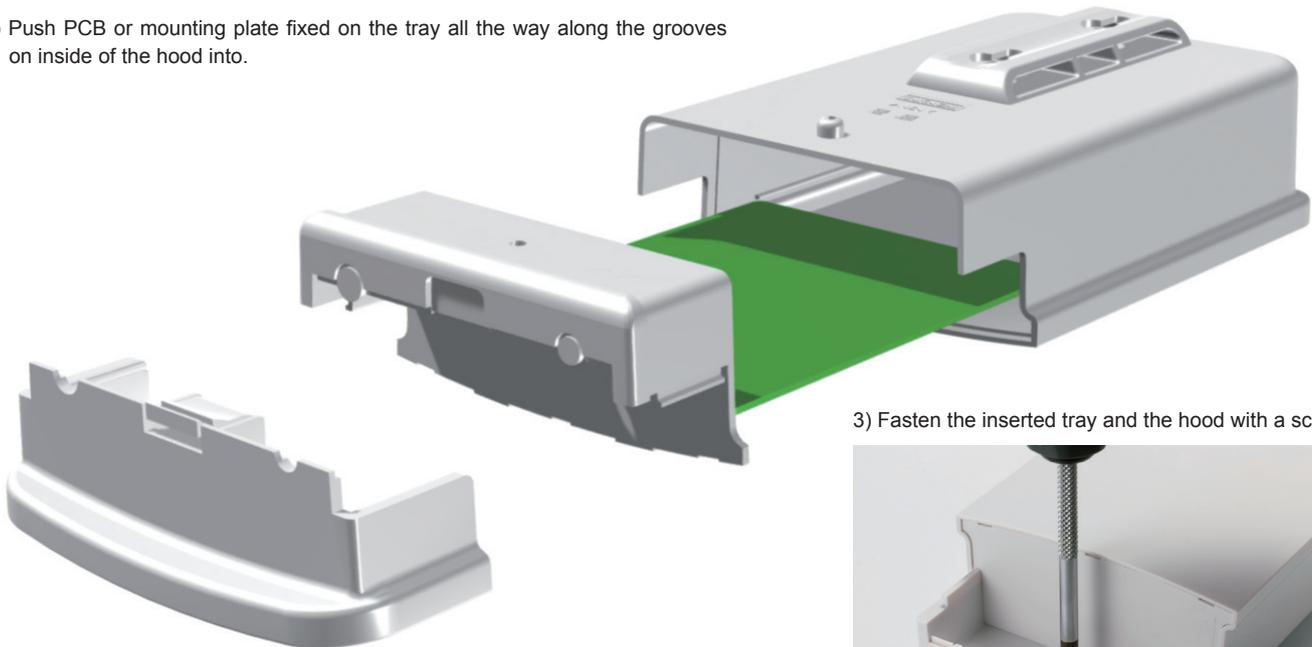


How to install PCB • Mounting plate

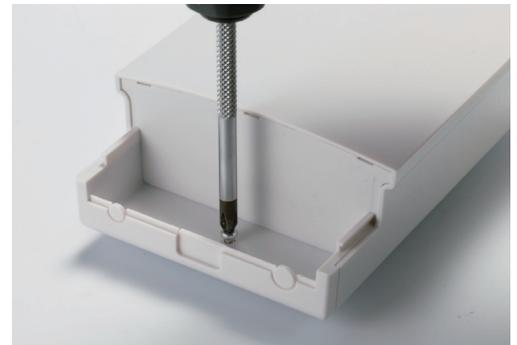
1) Fix PCB or mounting plate on the tray with screws.



2) Push PCB or mounting plate fixed on the tray all the way along the grooves on inside of the hood into.



3) Fasten the inserted tray and the hood with a screw.



Easy knock-out hole punching & cover replacement

Tray comes with knock-out holes for wiring. Knock-out holes can easily be punched out through with a plier or a nipper. The cover can be easily removed with one touch, hence it is an excellent structure for performing maintenance. For wiring, please machine cutout/hole on the side-wall of the tray as shown in the installation example below.



Connector installation example



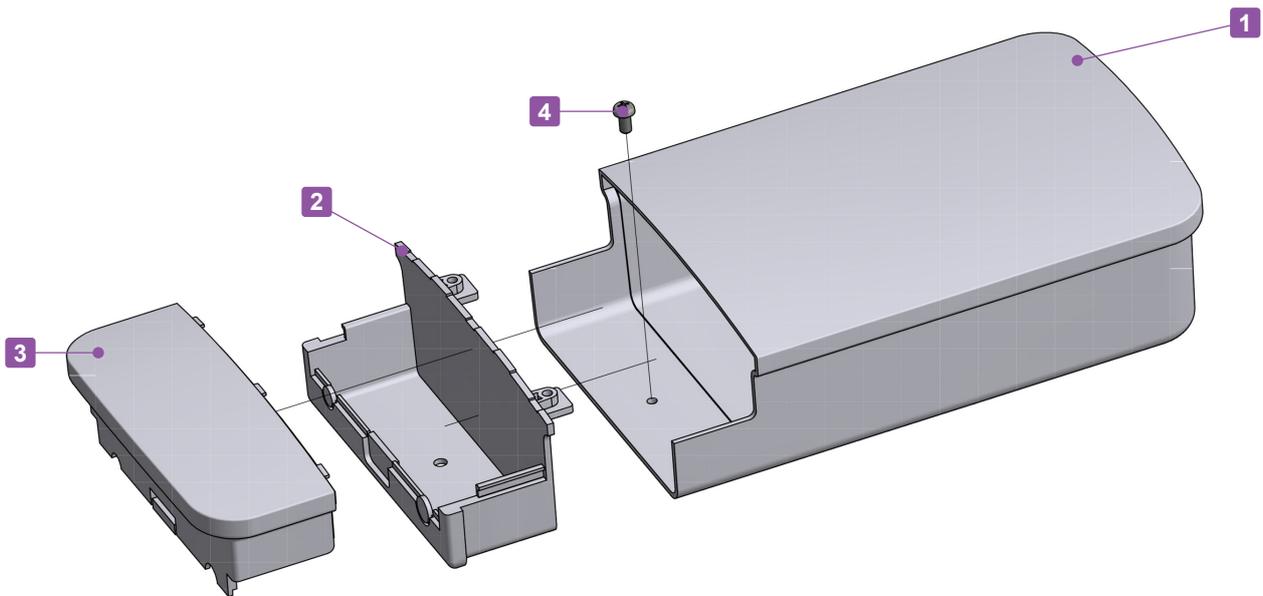


- Unique seamless construction and rainproof outdoor network box. Although it is IP44, it can completely protect the internal components against rain when installed vertically.
- ASA material is resistant to deterioration and discoloration from ultraviolet rays. Perfect for use as outdoor communication devices.
- Bracket integrated in the backside equipped with the slits allows for pole mounting belt to be passed through the slit for pole mounting, while the hanging holes enable it to be secured onto wall hooks or brackets.
- Tray comes with knock-out holes for wiring. Knock-out holes can easily be punched out through with a plier or a nipper.



| Technical Data | |
|-------------------------|---------------|
| Protection class : | IP44 |
| Operating temperature : | -30°C ~ +60°C |

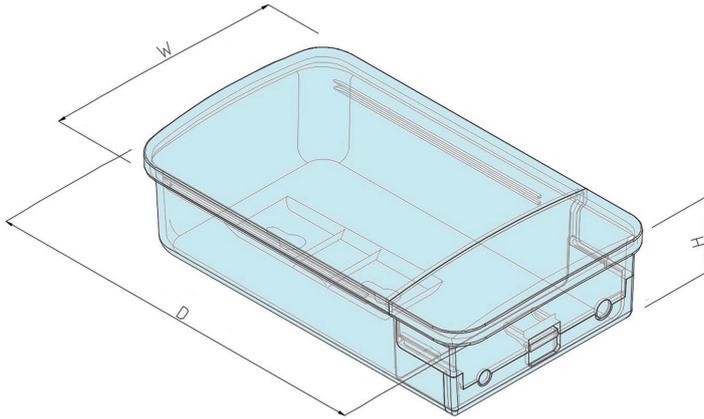
*May become brittle and break under impact when temperature is lowered close to -30°C.



Components

| No. | Part name | Pcs | Material / Color |
|-----|-------------------------------|-----|------------------------------|
| 1 | Hood | 1 | ASA UL94HB / Off-white |
| 2 | Tray | 1 | ASA UL94HB / Off-white |
| 3 | Cover | 1 | ASA UL94HB / Off-white |
| 4 | Screw (Tray/PCB installation) | 3 | Stainless steel / Unfinished |

OB dimensions



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

APPLICATION EXAMPLE
Network Device



Product no. / Details

| Product no. | External dimensions | | | Knock-out holes |
|-------------|---------------------|-----|----|-------------------|
| | W | D | H | |
| OB 8-14-4W | 75 | 140 | 35 | 5.6Φ x1 • 7.2Φ x1 |
| OB10-17-5W | 100 | 170 | 45 | 5.6Φ x1 • 7.2Φ x1 |
| OB13-21-6W | 125 | 210 | 55 | 7Φ x1 • 10Φ x1 |

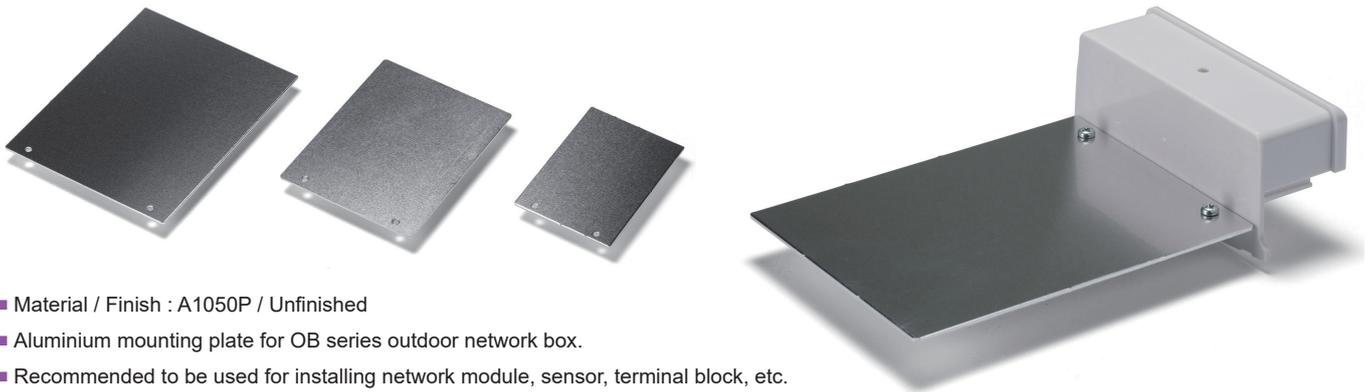
Accessories (Optional parts)



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

Accessories (Optional parts)

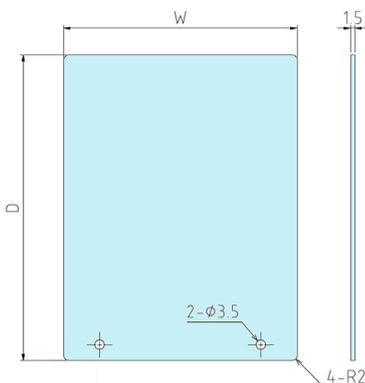
OBP series MOUNTING PLATE for OB



- Material / Finish : A1050P / Unfinished
- Aluminium mounting plate for OB series outdoor network box.
- Recommended to be used for installing network module, sensor, terminal block, etc.

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

OBP dimensions



Product no. / Details

| Product no. | W | D | Suitable models | Weight (g) |
|-------------|-------|-----|-----------------|------------|
| OBP 8-14 | 61.8 | 85 | OB 8-14-4W | 22.5 |
| OBP10-17 | 87.1 | 115 | OB10-17-5W | 40 |
| OBP13-21 | 110.5 | 135 | OB13-21-6W | 61 |

IP68 / IP67 UV-PROTECT NETWORK PLASTIC BOX WP series



Waterproofing ability by using silicone gasket

Highly elastic and durable silicone gasket for high waterproof ability. The use of insert nuts allows the unit to retain its waterproof ability even after multiple opening and closing.



Weather-resistant ASA material

The white gray "G" type utilize a UV resistant, durable ASA material. Recommended for outdoor usage as a communication device type equipment.



Easy installation on walls

Easy mounting onto walls by opening the blind lids. A clean and sleek appearance can be maintained as screws are hidden away by the blind lids.



Easy installation on electrical poles

By using a pole mounting accessory, it can be attached to poles with ease.



Information on waterproofing after hole milling for switches

The waterproof performance will be lost once hole or cutout is milling on IP rated enclosure.
 To ensure it remains waterproof after hole/cutout milling, IP rated membrane pad or overlay is required.



WP series APPLICATION EXAMPLE

Outdoor Lighting Remote Controller

Leak Guard - Home Water Leak Detector



Clay Pigeon Shooting Controller

Wireless Temperature / Humidity Transmitter



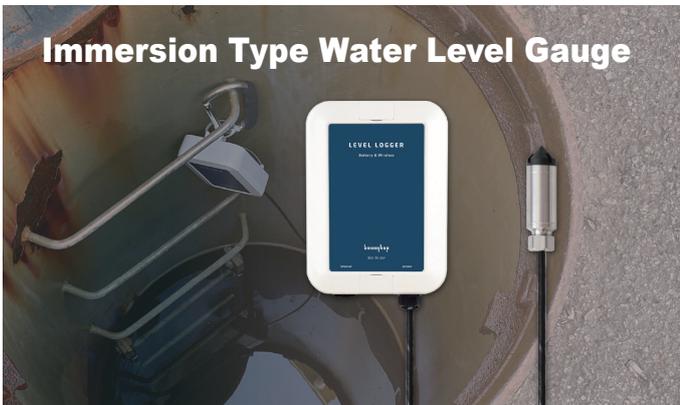
WP series APPLICATION EXAMPLE



LoRa Gateway

LoRa = Long Range Transmission

LoRaWAN Gateway



Immersion Type Water Level Gauge

Outdoor Cloud Data Logger



Detection Sensor for Bird/Beast Trap



Crane Expansion Sensor

Wireless Indoor Air Monitoring System



LoRa WAN Pressure Transmitter



Sigfox Multi Sensor



Network Sensor for Agriculture



Argonomic Parameter Surveillance Unit



Crop Growing Remote Monitoring Device



Bird/Beast Damage Control Sensor





- IP68 (IP67 for WP20-28-○) high performance plastic box protected from immersion as long as 24 hours at 1m depth.
- 24 different sizes available in white gray UV-resistant ASA and charcoal gray flame-resistant ABS. Recommended for use as outdoor communication or network devices.
- Mount on walls or brackets by simply opening the blind lids.
- Pole mounting is possible via an optional pole mounting bracket accessory.

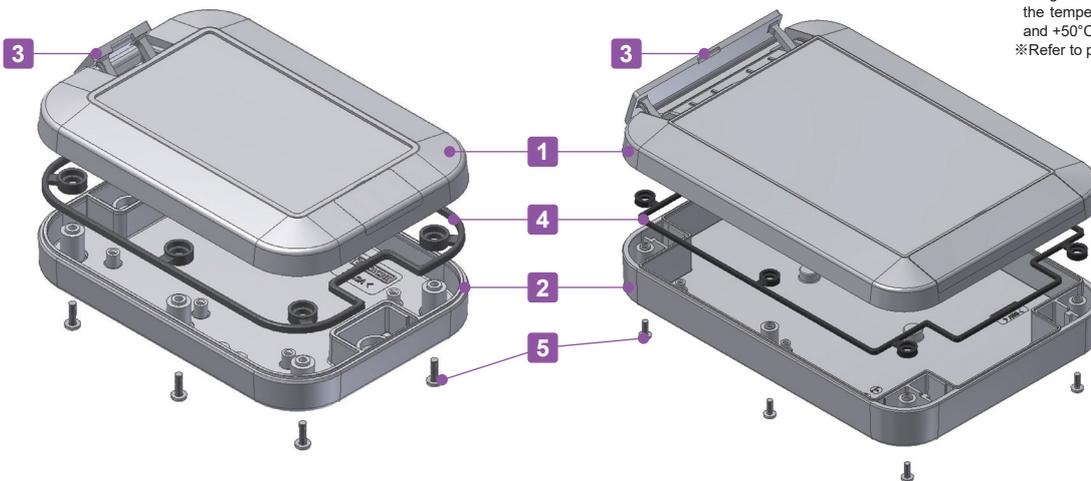


Technical Data

| | |
|---------------------------------|------------------------------|
| Protection class : | IP68 (24-hours/1m-depth) |
| | WP20-28-5□ } IP67 |
| | WP20-28-7□ } |
| Operating temperature : | |
| Models = 5-7-□ ~ 20-20-□: | ASA ¹ -20 ~ +60°C |
| | ABS -10 ~ +50°C |
| Models = 20-28-□ ² : | ASA ¹ -20 ~ +55°C |
| | ABS -10 ~ +45°C |

WP5-7-2 ~ WP13-18-5

WP15-15-4 ~ WP20-28-7



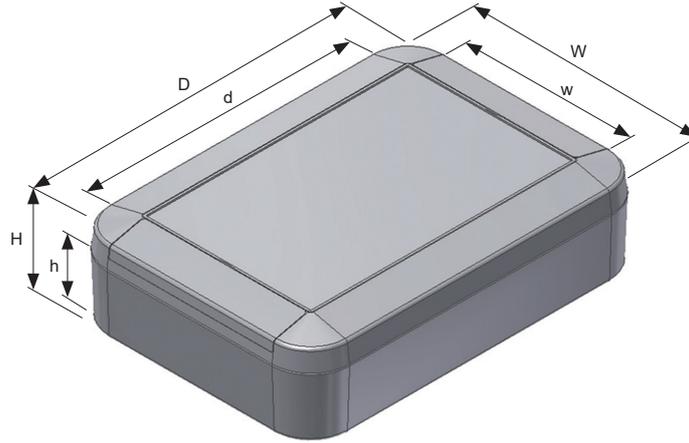
¹ May become brittle and break under impact when temperature is lowered close to -20°C.
² Usage of the PMF series protective vent will raise the temperature limit for ASA and ABS to +60°C and +50°C respectively.
 ※Refer to page 125 for more information.

Components

| No. | Part name | Pcs | Material / Color |
|-----|-------------|-------|---|
| 1 | Top cover | 1 | ASA UL94HB / White gray : Flame-resistant ABS UL94V-0 / Charcoal gray |
| 2 | Bottom base | 1 | ASA UL94HB / White gray : Flame-resistant ABS UL94V-0 / Charcoal gray |
| 3 | Blind lids | 2 | ASA UL94HB / White gray : Flame-resistant ABS UL94V-0 / Charcoal gray |
| 4 | Gasket | 1 | Silicone / Black |
| 5 | Screw | 4 ~ 8 | Stainless steel binding head screw / Unfinished |

WP dimensions

■ DXF/DWG/PDF/3D PDF/STP drawings available on our website.



Product no. / Details

| Product no. | | IP Code | External dimensions | | | Internal dimensions | | | Screw | Recommended torque (N · m) | Weight (g) |
|--------------------|-----------------------|---------|---------------------|-----|----|---------------------|------|------|----------------|----------------------------|------------|
| ● White gray (ASA) | ● Charcoal gray (ABS) | | W | D | H | w | d | h | | | |
| WP 5- 7-2G | WP 5- 7-2C | IP68 | 52 | 65 | 18 | 46 | 37 | 13 | M2-8 × 4pcs | 0.2 ~ 0.25 | 31.5 |
| WP 5- 7-3G | WP 5- 7-3C | IP68 | 52 | 65 | 27 | 45 | 36.5 | 22 | M2-8 × 4pcs | 0.2 ~ 0.25 | 39.5 |
| WP 6- 8-2G | WP 6- 8-2C | IP68 | 60 | 80 | 20 | 53.5 | 52 | 14.7 | M2-8 × 4pcs | 0.25 ~ 0.3 | 41.5 |
| WP 6- 8-3G | WP 6- 8-3C | IP68 | 60 | 80 | 30 | 53 | 51 | 24.7 | M2-8 × 4pcs | 0.25 ~ 0.3 | 49 |
| WP 8- 8-2G | WP 8- 8-2C | IP68 | 75 | 75 | 22 | 67 | 42 | 16.4 | M2.5-8 × 4pcs | 0.25 ~ 0.35 | 57.5 |
| WP 8- 8-4G | WP 8- 8-4C | IP68 | 75 | 75 | 35 | 66 | 42 | 29.4 | M2.5-16 × 4pcs | 0.25 ~ 0.35 | 88.5 |
| WP 8-10-2G | WP 8-10-2C | IP68 | 75 | 100 | 22 | 67 | 67 | 16 | M2.5-8 × 4pcs | 0.25 ~ 0.35 | 74 |
| WP 8-10-4G | WP 8-10-4C | IP68 | 75 | 100 | 35 | 66 | 67 | 29 | M2.5-16 × 4pcs | 0.25 ~ 0.35 | 95 |
| WP 9-13-3G | WP 9-13-3C | IP68 | 90 | 130 | 25 | 81 | 91 | 18 | M2.5-8 × 6pcs | 0.25 ~ 0.35 | 113 |
| WP 9-13-4G | WP 9-13-4C | IP68 | 90 | 130 | 40 | 81 | 91 | 33 | M2.5-16 × 6pcs | 0.25 ~ 0.35 | 141 |
| WP10-10-3G | WP10-10-3C | IP68 | 100 | 100 | 25 | 90 | 61 | 18 | M2.5-8 × 4pcs | 0.25 ~ 0.35 | 96 |
| WP10-10-4G | WP10-10-4C | IP68 | 100 | 100 | 40 | 90 | 61 | 33 | M2.5-16 × 4pcs | 0.25 ~ 0.35 | 121 |
| WP11-15-3G | WP11-15-3C | IP68 | 110 | 150 | 27 | 100 | 110 | 20 | M2.5-8 × 6pcs | 0.25 ~ 0.35 | 153 |
| WP11-15-4G | WP11-15-4C | IP68 | 110 | 150 | 40 | 100 | 110 | 33 | M2.5-16 × 6pcs | 0.25 ~ 0.35 | 181 |
| WP13-18-3G | WP13-18-3C | IP68 | 130 | 175 | 30 | 120 | 135 | 23 | M2.5-8 × 6pcs | 0.25 ~ 0.35 | 225 |
| WP13-18-5G | WP13-18-5C | IP68 | 130 | 175 | 45 | 120 | 135 | 38 | M2.5-16 × 6pcs | 0.25 ~ 0.35 | 266 |
| WP15-15-4G | WP15-15-4C | IP68 | 150 | 150 | 40 | 141 | 100 | 33.5 | M3-8 × 4pcs | 0.35 ~ 0.45 | 239 |
| WP15-15-6G | WP15-15-6C | IP68 | 150 | 150 | 55 | 140 | 100 | 48.5 | M3-8 × 4pcs | 0.35 ~ 0.45 | 282.5 |
| WP15-21-4G | WP15-21-4C | IP68 | 150 | 210 | 40 | 141 | 160 | 33.5 | M3-8 × 6pcs | 0.35 ~ 0.45 | 323 |
| WP15-21-6G | WP15-21-6C | IP68 | 150 | 210 | 55 | 140 | 160 | 48.5 | M3-8 × 6pcs | 0.35 ~ 0.45 | 367.5 |
| WP20-20-5G | WP20-20-5C | IP68 | 200 | 200 | 45 | 190 | 150 | 38.5 | M3-8 × 8pcs | 0.45 ~ 0.55 | 446 |
| WP20-20-7G | WP20-20-7C | IP68 | 200 | 200 | 65 | 189 | 149 | 58.5 | M3-8 × 8pcs | 0.45 ~ 0.55 | 524.5 |
| WP20-28-5G | WP20-28-5C | IP67 | 200 | 280 | 45 | 190 | 230 | 38.5 | M3-8 × 8pcs | 0.45 ~ 0.55 | 557.5 |
| WP20-28-7G | WP20-28-7C | IP67 | 200 | 280 | 65 | 189 | 229 | 58.5 | M3-8 × 8pcs | 0.45 ~ 0.55 | 646 |

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

Accessories (Optional parts)



Pole mount bracket WPMB series
See page 123



Rubber feet PFRF series



TORX screw MR series
See page 124



PCB mounting screw EM series
See page 398



Protective vent PMF · CVP series
See page 197 ~ 200



Cable gland
See page 181 ~ 193



Pole mounting belt PKB-10 series
See page 208



Tapping standoff TPS series
See page 397

WPMB series

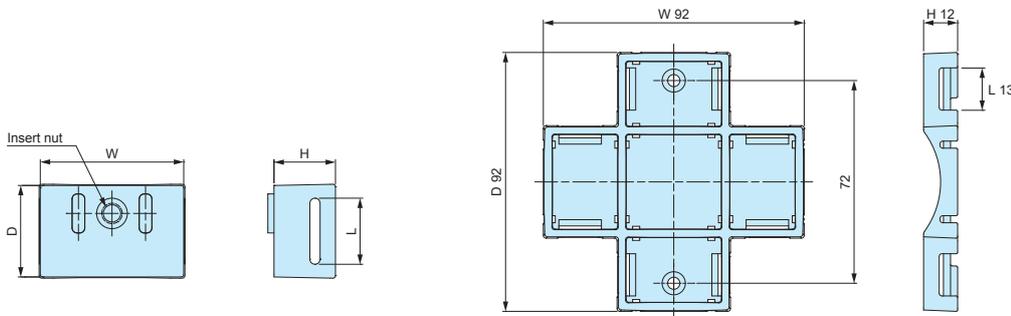
POLE MOUNTING BRACKET for WP



- Pole mount bracket made from weather resistant ASA material.
- Hole milling is not required when installing the mount bracket, thus allowing the enclosure to maintain its IP67 protection.
- WPMB-M4-2 can be used for both vertical and horizontal installation.
- Together with WPMB series, the PKB series mounting belt allows the unit to be mounted onto a pole.

WPMB dimensions

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



Color Type

| Code | Color |
|------|------------|
| G | White gray |
| D | Dark gray |

WPMB-M3 • WPMB-M4

WPMB-M4-2

Product no. / Details

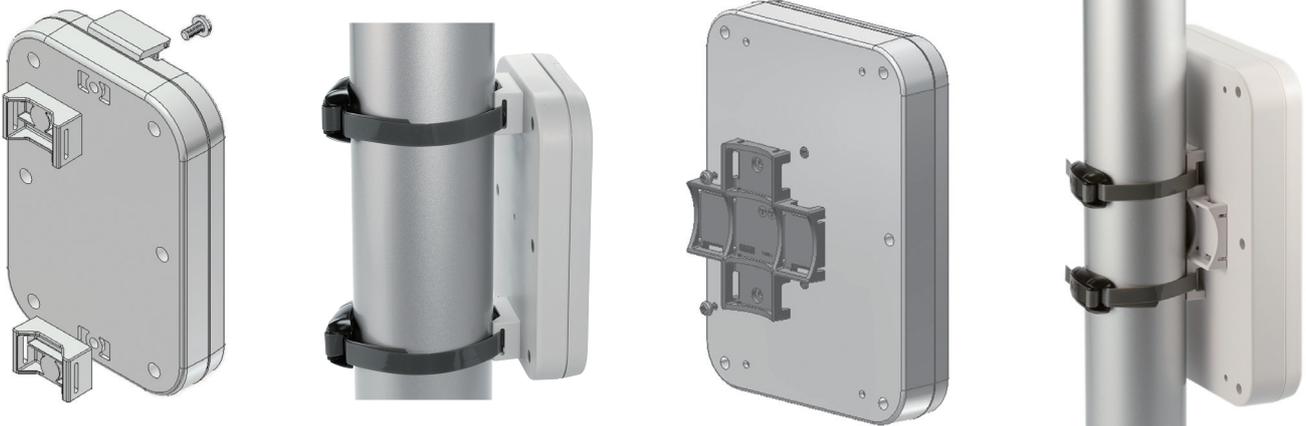
■ Please suffix color code at the end of the product number.

| Product no. | Dimensions | | | | Screw | Suitable models | Recommended torque (N • m) | Weight (g) | Pack of |
|-------------|------------|----|-----|----|---------------------------------|---|----------------------------|------------|---------|
| | W | D | H | L | | | | | |
| WPMB-M3□ | 18 | 14 | 9.5 | 11 | Stainless steel M3-6 x 2 pcs | WP5-7-2 • 5-7-3 • 6-8-2 • 6-8-3 • 8-8-2 • 8-8-4 • 8-10-2 • 8-10-4 | 0.4 ~ 0.45 | 3 | 2 |
| WPMB-M4□ | 28 | 18 | 12 | 13 | Stainless steel M4-8 x 2 pcs | WP9-13-3 • 9-13-4 • 10-10-3 • 10-10-4 • 11-15-3 • 11-15-4 • 13-18-3 • 13-18-5 | 0.45 ~ 0.5 | 10 | 2 |
| WPMB-M4-2□ | 92 | 92 | 12 | 13 | Stainless steel M4-6 x 2 pcs | WP15-15-4 • 15-15-6 • 15-21-4 • 15-21-6 • 20-20-5 • 20-20-7 • 20-28-5 • 20-28-7 | 0.45 ~ 0.5 | 24 | 1 |

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

WPMB-M3 / WPMB-M4

WPMB-M4-2

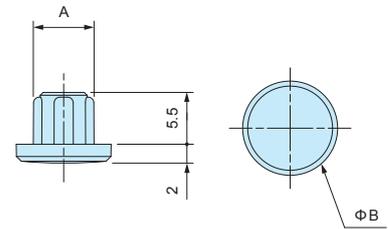


PFRF series

RUBBER FEET



PFRF dimensions



■ STP drawings available on our website.

- Recommended to be used with WP series as a desktop-type unit.
- No additional hole milling is required as the rubber feet fits snugly into the screw holes.
- Made from elastomer material.
- Unavailable for use with WP5-7-2, 5-7-3, 6-8-2, and 6-8-3 models.

Product no. / Details

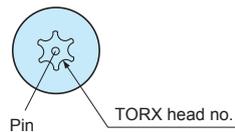
| Product no. | Dimensions | | Material | Color | Suitable models | Pack of |
|-------------|------------|----|------------------|-----------|---|---------|
| | A | B | | | | |
| PFRF-M2.5D | 6.4 | 10 | Elastomer UL94HB | Dark gray | WP8-8-2 • 8-8-4 • 8-10-2 • 8-10-4 • 9-13-3 • 9-13-4 • 10-10-3 • 10-10-4 • 11-15-3 • 11-15-4 • 13-18-3 • 13-18-5 | 4 |
| PFRF-M3D | 7.2 | 11 | Elastomer UL94HB | Dark gray | WP15-15-4 • 15-15-6 • 15-21-4 • 15-21-6 • 20-20-5 • 20-20-7 • 20-28-5 • 20-28-7 | 4 |

MR series

TORX SCREW



Head type (with pin)



- Recommended to be used for tamper resistance, or for an elegant look and feel.
- Requires the use of a specialized screwdriver.
- Unavailable for use with WP5-7-2, 5-7-3, 6-8-2, and 6-8-3 models.

Product no. / Details

| Product no. | Dimensions | | TORX head no. | Material | Finish | Suitable models | Pack of |
|-------------|------------|----|-----------------|-----------------|------------|---|---------|
| | M | L | | | | | |
| MR2.5-8ST | 2.5 | 8 | T 8 (with pin) | Stainless steel | Unfinished | WP8-8-2 • 8-10-2 • 9-13-3 • 10-10-3 • 11-15-3 • 13-18-3/WSC series | 20 |
| MR2.5-16ST | 2.5 | 16 | T 8 (with pin) | Stainless steel | Unfinished | WP8-8-4 • 8-10-4 • 9-13-4 • 10-10-4 • 11-15-4 • 13-18-5 | 20 |
| MR3-8ST | 3 | 8 | T 10 (with pin) | Stainless steel | Unfinished | WP15-15-4 • 15-15-6 • 15-21-4 • 15-21-6 • 20-20-5 • 20-20-7 • 20-28-5 • 20-28-7 | 20 |

Effect of PMF protective vent on WP series box

WP series enclosure comes with a silicone gasket, which allows the enclosure to be airtight when assembled.

When used in environments where there are large temperature fluctuations or differences, the internal and external pressure will become uneven. If this pressure within is unable to be properly vented, it may cause the enclosure to deform and warp.

By installing the PMF series protective vent, it will assist in equalizing the air pressure, and prevent potential deformation.

Evaluation Target

1. WP20-28-7G - 2 pcs / 2. WP20-28-7G with PMF-12HAS - 2 pcs

Test Conditions

Device : Constant temperature/humidity test chamber - LH43-W14P

Make : NAGANO SCIENCE CO., LTD.

Testing in -20°C ~ +60°C (Operating temperature for WP series)

Low Temperature : -20°C / 96 hours • High Temperature : +60°C / 96 hours

Test Result

1. WP20-28-7G - 2 pcs

Uneven internal and external pressure causes deformation of the enclosure.



Test Result

2. WP20-28-7G with PMF-12HAS - 2 pcs

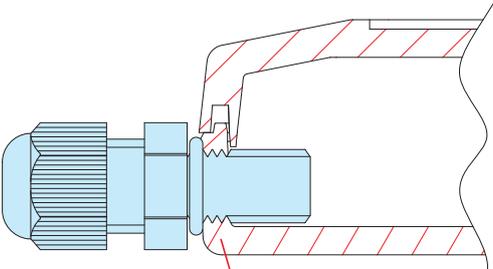
Equalized pressure from the usage of a protective vent prevents deformation of the enclosure.



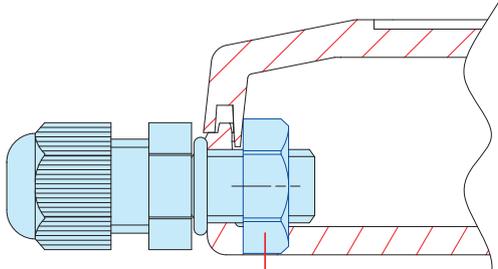
Information on installation of cable glands



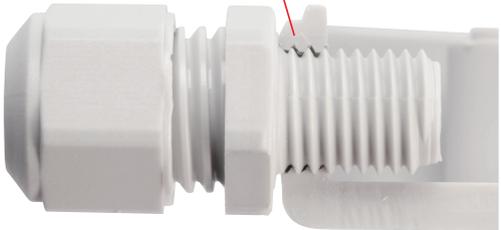
■ When affixing on cable glands to areas without sufficient space, the nut may not be able to be properly secured on. For such instances, a thread-hole should be made for the cable gland to be directly screwed into without utilizing the nut.



Cross-section



Obstruction



■ Thread-hole sizes from M6~M32, and PG7~PG21 are possible with our customization services

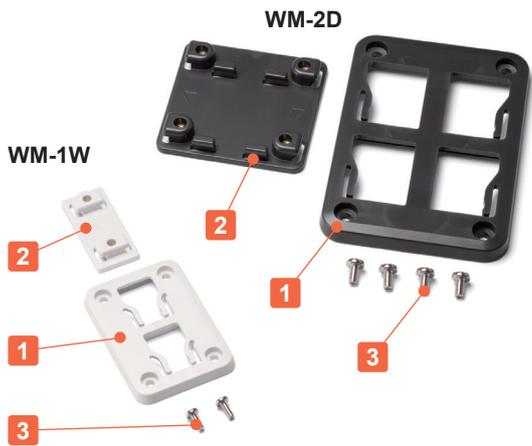


■ Please utilize a cable gland from our available range of cable gland accessories. Refer to page 181 ~ 193 for more information.



WM series

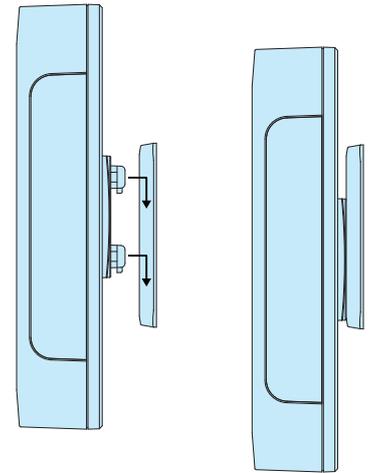
SUSPENSION BRACKET



Installation example



How to install



- Plastic wall mounting bracket. Easy attachment and removal.
- Large and small bracket types are available.
- Applicable to be used on plastic or metallic enclosures with a panel thickness of 0.8 ~ 3.5mm.
- To attach the suspension hook onto the enclosure, hole milling is required.
- Please be aware of the insertion direction of the suspension hook against the mounting base when attaching.
- DXF/DWG/PDF/STP drawings available on our website.

| Technical Data | |
|-----------------------|--|
| Max load : WM-1 - 2kg | |
| WM-2 - 5kg | |

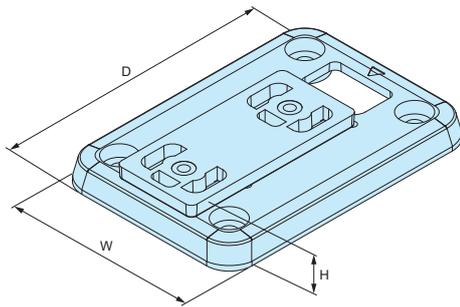
* The max load values listed are static load values only. Use caution when handling.

Components

| No. | Name | Pcs | Material | Color / Finish |
|-----|-----------------|----------------------|-----------------|-----------------------|
| 1 | Mounting base | 1 | PC + ABS UL94HB | Off-white • Dark gray |
| 2 | Suspension hook | 1 | PC + ABS UL94HB | Off-white • Dark gray |
| 3 | Screw | 2 (WM-1) 4 (WM-2) | Steel | Nickel plated |

Included Screw

WM-1□ : Bind M3-8
WM-2□ : Bind M4-88



Product no. / Details

| Product no. | | W | H | D | Mountable thickness | Weight (g) |
|-------------|-------------|----|----|-----|---------------------|------------|
| ● Off-white | ● Dark gray | | | | | |
| WM-1W | WM-1D | 45 | 9 | 65 | t0.8~t3.5 | 11.5 |
| WM-2W | WM-2D | 80 | 11 | 115 | t0.8~t3.5 | 48 |

PMB-1

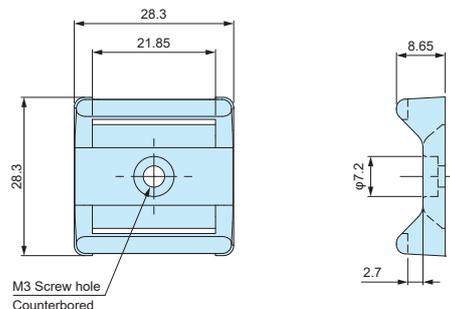
POLE MOUNTING BRACKET



Installation example



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



- Small size pole mounting bracket suitable for indoor use.
- Installation screws (M3 size) are separately sold. See page HES • HOS • MT for compatible MT3-4 screws.
- Minimum applicable pole diameter is $\Phi 35$.
- Use SNB • PKB • SCT mounting belt to install onto a pole.

Product no. / Details

■ Material / Color : PA66+GF (UL94HB) / Black

| Product no. | Maximum load (kg) | Weight (g) | Pack of |
|-------------|-------------------|-------------|---------|
| PMB-1 | 1 | 3 (1 piece) | 2 |

WSC series IP67 SLOPED PLASTIC CASE



Ergonomic design and streamlined shape

Best suited for desktop operation with its sloped surface.
2 different inclined angles, 13° and 18° are available to select for various operating environments.
Streamlined shape enables the unit to be gripped better when used as a handheld instrument.



2 angles : 13° and 18°

Photo : 13° type



IP67 water- and dust-proof structure that can withstand various environments

High elasticity and good durability for maintaining waterproofing capability.
Built-in insert nut use for long-lasting protection even after frequent opening and closing.



APPLICATION EXAMPLE

**Medical Measurement Device •
Medical Controller**



**Transmitter •
Network Equipment**



RFID Card Reader



**RFID Reader for ICT Entry/Exit System
"KIDSNA connect" for Daycare/Preschool**



Information on waterproofing after hole milling for switches

The waterproof performance will be lost once hole or cutout is machined on an IP rated enclosure. To ensure it remains waterproof after hole/cutout machining, IP rated membrane pad or overlay is required.



Information on affixing of cables into waterproof enclosures

Please utilize a cable gland from our available range of cable gland accessories.





| Technical Data |
|---------------------------------------|
| Protection class : IP67 |
| Operating temperature : -10°C ~ +60°C |
| Recommended torque : 0.2 ~ 0.3N · m |

- Suitable as a desktop controller or measurement instrument with its ergonomic design.
- Streamlined shape enables the unit to be gripped better when used as a handheld instrument.
- IP67 protection class allows the unit to be used outdoors or under environments with water splashes, such as for medical research or measuring equipment.

Components

| No. | Part name | Pcs | Material | Color / Finish |
|-----|-------------|-----|-------------------------------------|-------------------|
| 1 | Top Cover | 1 | Flame-resistant ABS UL94V-0 | Off-white • Black |
| 2 | Bottom base | 1 | Flame-resistant ABS UL94V-0 | Off-white • Black |
| 3 | Gasket | 1 | Silicone | Black |
| 4 | Screw | 4 | Stainless steel binding head M2.5-8 | Unfinished |
| 5 | Rubber feet | 4 | Polyurethane | Transparent |

Accessories (Optional parts)



PCB mounting screw EM series
See page 398



Adhesive standoff AST series
See page 394



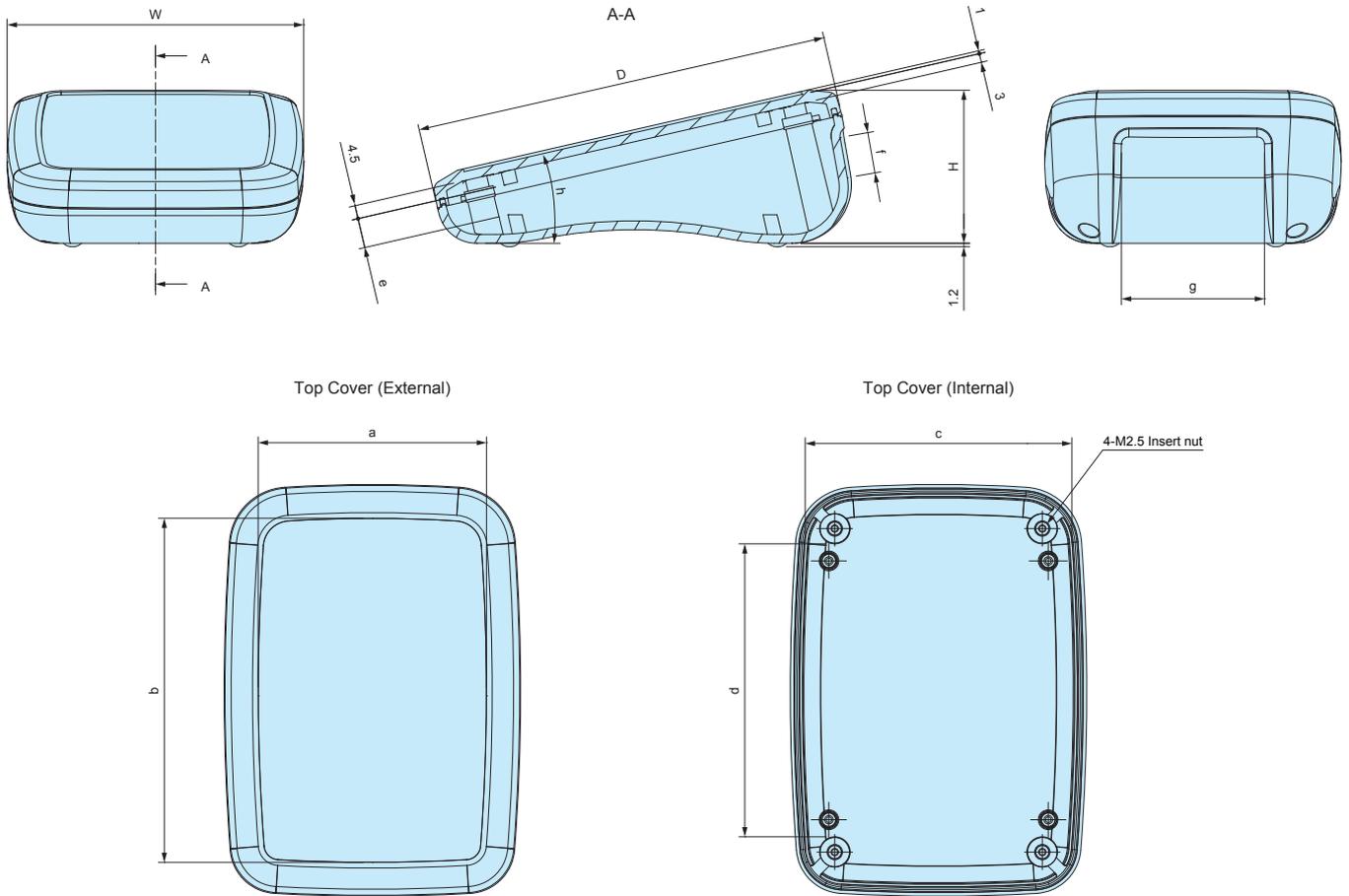
TORX screw MR series
See page 398



Cable gland
See page 181 ~ 193

WSC dimensions

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



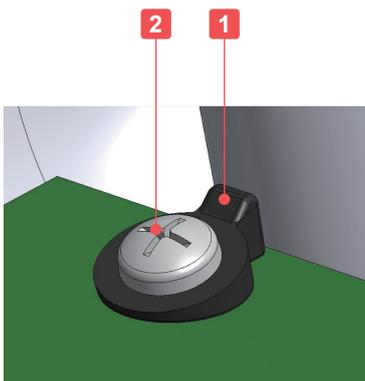
Product no. / Details

| Product no. | | Dimensions | | | | | | | | | | Face angle | Weight (g) |
|-------------|-------------|------------|-----|----|-----|-----|-----|-----|------|------|-------|------------|------------|
| ● Off-white | ● Black | W | D | H | a | b | c | d | e | f | g | h | |
| WSC10-14-5W | WSC10-14-5B | 100 | 140 | 52 | 77 | 117 | 87 | 100 | 10 | 13.9 | 48.2 | 13° | 145 |
| WSC10-14-7W | WSC10-14-7B | 100 | 140 | 72 | 77 | 117 | 87 | 100 | 22 | 27.4 | 48.2 | 18° | 168 |
| WSC14-14-5W | WSC14-14-5B | 140 | 140 | 52 | 117 | 117 | 128 | 100 | 10 | 13.8 | 80.5 | 13° | 190 |
| WSC14-14-7W | WSC14-14-7B | 140 | 140 | 72 | 117 | 117 | 128 | 100 | 22 | 27.4 | 80.5 | 18° | 218 |
| WSC18-14-5W | WSC18-14-5B | 175 | 140 | 52 | 152 | 117 | 163 | 95 | 11.3 | 13.8 | 103.5 | 13° | 234 |
| WSC18-14-7W | WSC18-14-7B | 175 | 140 | 72 | 152 | 117 | 163 | 95 | 23.7 | 27.4 | 103.5 | 18° | 262 |

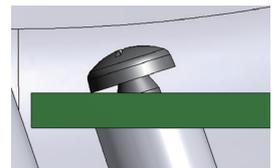
Accessories (Optional parts)

WSP-M2.3

INCLINED SPACER for WSC



- Due to the sloped shape of the WSC series, boss-tops are also angled. Therefore when mounting PCB on, some gap between the screw head and PCB surface will occur as shown in the diagram. WSP-M2.3 helps to fill the gap.
- EM-2.3-8 as PCB mounting screws are available for bosses in bottom base. (See page 398)



Components

| No. | Part name | Pcs | Material | Color / Finish |
|-----|------------------------|-----|----------|--------------------|
| 1 | Inclined spacer | 4 | POM | Black |
| 2 | Screw (Tapping M2.3-8) | 4 | Steel | Trivalent chromate |

Recommended torque : 0.1N • m

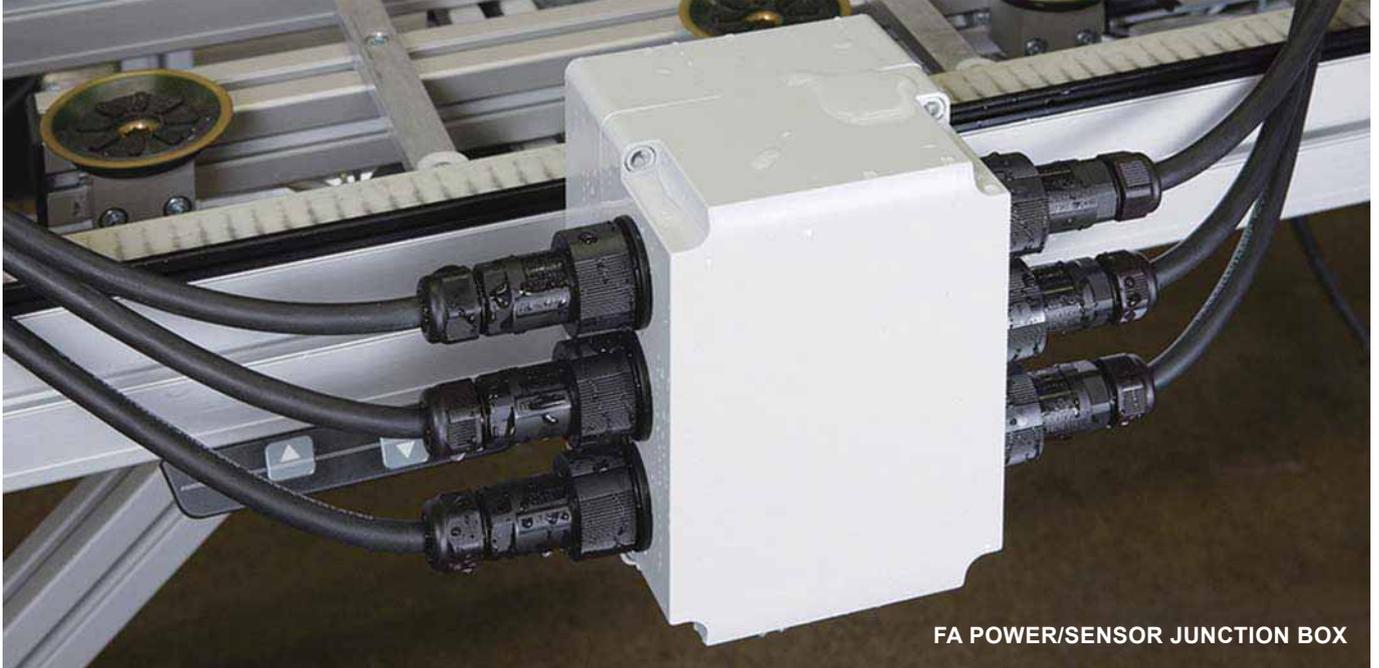
Product no. / Details

| Product no. | Suitable models | Pack of |
|-------------|--------------------------------|---------|
| WSP-M2.3 | WSC (for bottom base PCB boss) | 4 |

IP67 POLYCARBONATE BOX

SPCP · SPCM SERIES APPLICATION EXAMPLE

Made from polycarbonate material, the SPCP · SPCM series features not only high durability, but also comes with IP67 protection. Suitable to be used in a wide range of applications, such as FA/control, measurement equipment, network communication and so on.



FA POWER/SENSOR JUNCTION BOX

INDUSTRIAL MOTOR JUNCTION BOX

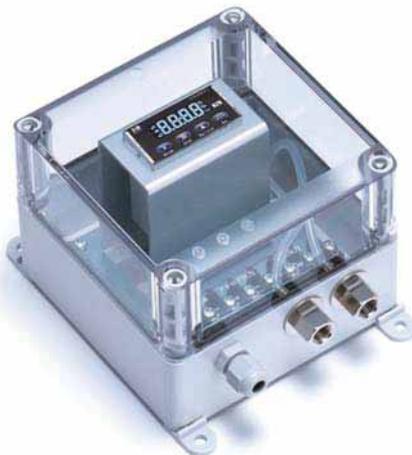


AUTOMATIC DOOR OPEN/CLOSE SWITCH



DIGITAL DIFFERENTIAL MANOMETER

Product by KRONE CORPORATION (Japan)



PARTS FEEDER COUNTER



REMOTE GREENHOUSE MONITORING SYSTEM

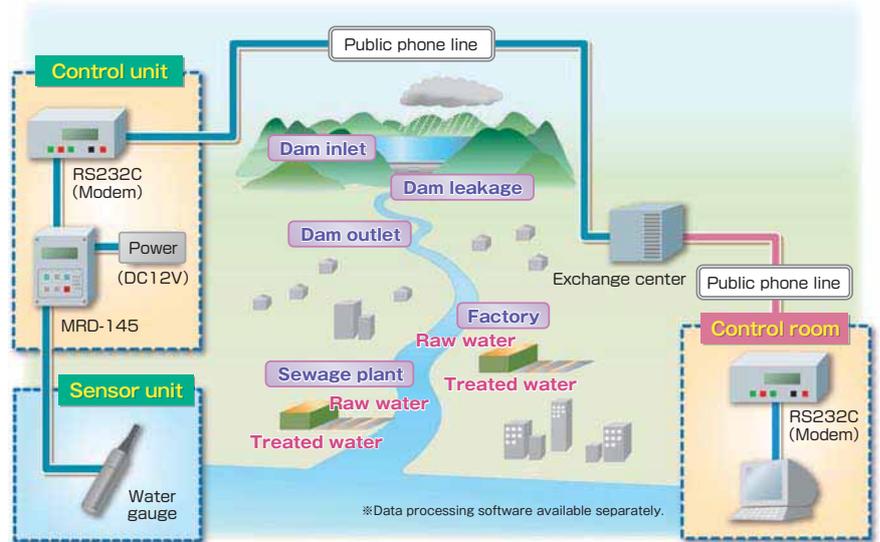


METEOROLOGICAL MONITOR



WATER LEVEL METER

Product by HOKUTO RIKEN (Japan)



DIGITAL ANEMOMETER

Product by North One (Japan)



SENSOR NETWORK MONITOR

Product by KYOSAITECHNOS (Japan)



FIELD DATA LOGGER

Product by M.C.S (Japan)



MONITORING CAMERA

Product by ACE PROMOTION (Japan)





Technical Data

Protection class : IP66 • IP67
 Operating temperature : -20°C ~ +75°C
 Recommended Torque : 1N • m ~ 1.5N • m



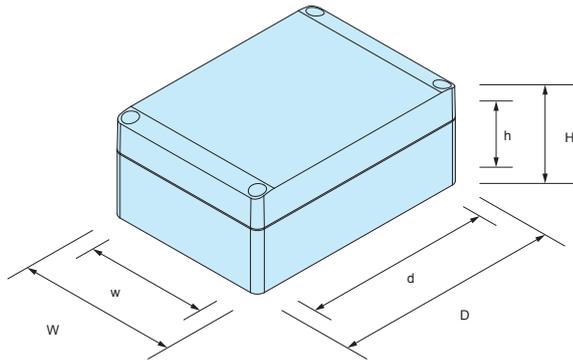
- UL certified products are SPCP.U series. See our website for more details.
- Please see our "PROTECTION CLASS (IP RATING)" document for details on the protection class when selecting your enclosure.
- Tough polycarbonate material for superior impact resistance.
- Available in 28 different sizes, with 2 different cover types (white gray and transparent).
- Suitable to be used as terminal junction box, control box, communication unit and more.
- Mountable on walls by using the cover holes for fastening.

Components

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

SPCP dimensions

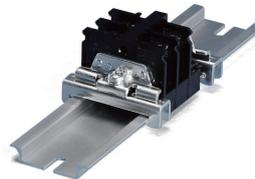
■ DXF/DWG/PDF/STP drawings available on our website.

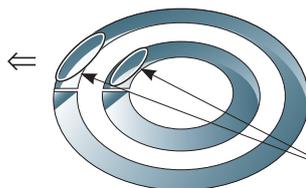
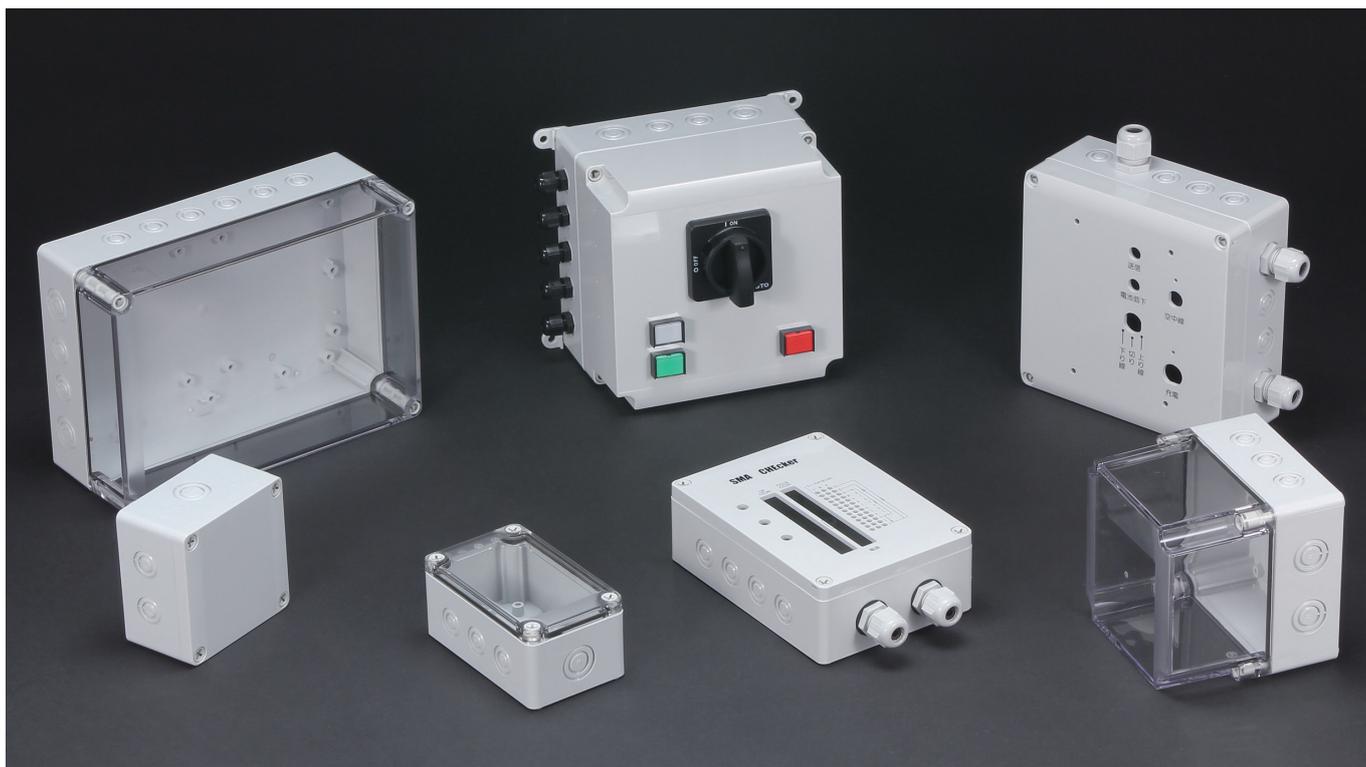


Product no. / Details

| Product no. | | | | Dimensions (External) | | | Dimensions (Internal) | | | Weight (g) |
|--------------|------|---------------|--------------|-----------------------|-----|-----|-----------------------|-------|-------|------------|
| G type | | T type | | W | D | H | w | d | h | |
| Cover | Body | Cover | Body | | | | | | | |
| ● White gray | | ○ Transparent | ● White gray | | | | | | | |
| SPCP081304G | | | SPCP081304T | 75 | 125 | 35 | 65.5 | 91 | 20.5 | 120 |
| SPCP081305G | | | SPCP081305T | 75 | 125 | 50 | 65.5 | 91 | 35.5 | 150 |
| SPCP081306G | | | SPCP081306T | 75 | 125 | 60 | 65.5 | 91 | 45.5 | 161 |
| SPCP081308G | | | SPCP081308T | 75 | 125 | 75 | 65.5 | 91 | 60.5 | 213 |
| SPCP081310G | | | SPCP081310T | 75 | 125 | 100 | 65 | 90.5 | 85.5 | 278 |
| SPCP081313G | | | SPCP081313T | 75 | 125 | 125 | 64.5 | 90 | 110.5 | 306 |
| SPCP101004G | | | SPCP101004T | 100 | 100 | 35 | 90.5 | 66 | 20.5 | 124 |
| SPCP101006G | | | SPCP101006T | 100 | 100 | 60 | 90.5 | 66 | 45.5 | 165 |
| SPCP131304G | | | SPCP131304T | 125 | 125 | 35 | 115.5 | 91 | 20.5 | 178 |
| SPCP131305G | | | SPCP131305T | 125 | 125 | 50 | 115.5 | 91 | 35.5 | 215 |
| SPCP131306G | | | SPCP131306T | 125 | 125 | 60 | 115.5 | 91 | 45.5 | 243 |
| SPCP131308G | | | SPCP131308T | 125 | 125 | 75 | 115.5 | 91 | 60.5 | 294 |
| SPCP131310G | | | SPCP131310T | 125 | 125 | 100 | 115 | 90.5 | 85.5 | 366 |
| SPCP131313G | | | SPCP131313T | 125 | 125 | 125 | 114.5 | 90 | 110.5 | 405 |
| SPCP131804G | | | SPCP131804T | 125 | 175 | 35 | 115.5 | 141 | 20.5 | 237 |
| SPCP131805G | | | SPCP131805T | 125 | 175 | 50 | 115.5 | 141 | 35.5 | 282 |
| SPCP131806G | | | SPCP131806T | 125 | 175 | 60 | 115.5 | 141 | 45.5 | 297 |
| SPCP131808G | | | SPCP131808T | 125 | 175 | 75 | 115.5 | 141 | 60.5 | 378 |
| SPCP131810G | | | SPCP131810T | 125 | 175 | 100 | 115 | 140.5 | 85.5 | 463 |
| SPCP131813G | | | SPCP131813T | 125 | 175 | 125 | 115 | 140.5 | 110.5 | 531 |
| SPCP131815G | | | SPCP131815T | 125 | 175 | 150 | 114 | 139.5 | 135.5 | 600 |
| SPCP181808G | | | SPCP181808T | 175 | 175 | 75 | 165.5 | 141 | 60.5 | 475 |
| SPCP181810G | | | SPCP181810T | 175 | 175 | 100 | 165 | 140.5 | 85.5 | 584 |
| SPCP181813G | | | SPCP181813T | 175 | 175 | 125 | 164.5 | 140 | 110.5 | 652 |
| SPCP181815G | | | SPCP181815T | 175 | 175 | 150 | 164 | 139.5 | 135.5 | 738 |
| SPCP182508G | | | SPCP182508T | 175 | 250 | 75 | 165.5 | 216 | 60.5 | 637 |
| SPCP182510G | | | SPCP182510T | 175 | 250 | 100 | 165 | 215.5 | 85.5 | 754 |
| SPCP182515G | | | SPCP182515T | 175 | 250 | 150 | 164 | 214.5 | 135.5 | 959 |

Accessories (Optional parts)

| | | | | |
|--|---|---|--|---|
|  |  |  |  |  |
| Terminal block • Terminal cover STB • STC series See page STB • STC-1 ~ STB • STC-4 | Mounting bracket SFL-1 See page SPCM • SPCP-ACC-1 | Mounting plate SMP series See page SPCM • SPCP-ACC-1 | Cable gland See cable gland pages | Protective vent PMF series See PMF pages |
|  |  |  |  |  |
| DIN-Rail FDR series See page FDR-1 ~ FDR-2 | Terminal block stopper TKR series See page DIN-ACC-2 | DIN-Rail mounting base DRA, DRT, CKD series See page DIN-ACC-1 ~ DIN-ACC-2 | Pole mounting bracket & belt SSK, PKB series See page SSK-1 ~ SSK-4 | Outdoor roof SR series See page SPCM • SPCP-ACC-2 |



■ 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.



| Technical Data | |
|-------------------------|-------------------|
| Protection class : | IP66 • IP67 |
| Operating temperature : | -20°C ~ +75°C |
| Recommended Torque : | 1N • m ~ 1.5N • m |

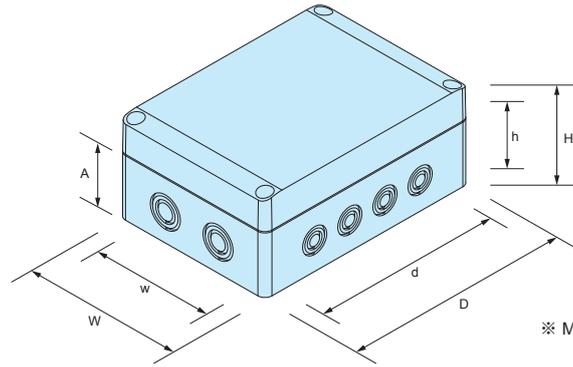
- UL certified products are SPCM.U series. See our website for more details.
- Please see our "PROTECTION CLASS (IP RATING)" document for details on the protection class when selecting your enclosure.
- Tough polycarbonate material for superior impact resistance.
- Available in 28 different sizes, with 2 different cover types (white gray and transparent).
- Molded with metric knock-outs to allow for easy cable entry.
- Suitable to be used as terminal junction box, control box, communication unit and more.
- Mountable on walls by using the cover holes for fastening.

Components

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

SPCM 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) |
|--------------|------|---------------|--------------|---------------------|-----|-----|----|---------------------|-------|-------|------------|
| G type | | T type | | W | D | H | A | w | d | h | |
| Cover | Body | Cover | Body | | | | | | | | |
| ● White gray | | ○ Transparent | ● White gray | | | | | | | | |
| SPCM081306G | | SPCM081306T | | 75 | 125 | 60 | 50 | 65.5 | 91 | 45.5 | 159 |
| SPCM081308G | | SPCM081308T | | 75 | 125 | 75 | 50 | 65.5 | 91 | 60.5 | 208 |
| SPCM081310G | | SPCM081310T | | 75 | 125 | 100 | 50 | 65 | 90.5 | 85.5 | 275 |
| SPCM081313G | | SPCM081313T | | 75 | 125 | 125 | 50 | 64.5 | 90 | 110.5 | 299 |
| SPCM101006G | | SPCM101006T | | 100 | 100 | 60 | 50 | 90.5 | 66 | 45.5 | 164 |
| SPCM131306G | | SPCM131306T | | 125 | 125 | 60 | 50 | 115.5 | 91 | 45.5 | 243 |
| SPCM131308G | | SPCM131308T | | 125 | 125 | 75 | 50 | 115.5 | 91 | 60.5 | 292 |
| SPCM131310G | | SPCM131310T | | 125 | 125 | 100 | 50 | 115 | 90.5 | 85.5 | 366 |
| SPCM131313G | | SPCM131313T | | 125 | 125 | 125 | 50 | 114.5 | 90 | 110.5 | 401 |
| SPCM131806G | | SPCM131806T | | 125 | 175 | 60 | 50 | 115.5 | 141 | 45.5 | 294 |
| SPCM131808G | | SPCM131808T | | 125 | 175 | 75 | 50 | 115.5 | 141 | 60.5 | 373 |
| SPCM131810G | | SPCM131810T | | 125 | 175 | 100 | 50 | 115 | 140.5 | 85.5 | 450 |
| SPCM131813G | | SPCM131813T | | 125 | 175 | 125 | 50 | 115 | 140.5 | 110.5 | 519 |
| SPCM131815G | | SPCM131815T | | 125 | 175 | 150 | 50 | 114 | 139.5 | 135.5 | 588 |
| SPCM181808G | | SPCM181808T | | 175 | 175 | 75 | 50 | 165.5 | 141 | 60.5 | 468 |
| SPCM181810G | | SPCM181810T | | 175 | 175 | 100 | 50 | 165 | 140.5 | 85.5 | 569 |
| SPCM181810HG | | SPCM181810HT | | 175 | 175 | 100 | 75 | 164.8 | 140.4 | 85.5 | 538 |
| SPCM181813G | | SPCM181813T | | 175 | 175 | 125 | 50 | 164.5 | 140 | 110.5 | 639 |
| SPCM181813HG | | SPCM181813HT | | 175 | 175 | 125 | 75 | 164.3 | 139.9 | 110.5 | 652 |
| SPCM181815G | | SPCM181815T | | 175 | 175 | 150 | 50 | 164 | 139.5 | 135.5 | 723 |
| SPCM181815HG | | SPCM181815HT | | 175 | 175 | 150 | 75 | 163.9 | 139.5 | 135.5 | 716 |
| SPCM181818HG | | SPCM181818HT | | 175 | 175 | 175 | 75 | 163.5 | 139.1 | 160.5 | 794 |
| SPCM182508G | | SPCM182508T | | 175 | 250 | 75 | 50 | 165.5 | 216 | 60.5 | 633 |
| SPCM182510G | | SPCM182510T | | 175 | 250 | 100 | 50 | 165 | 215.5 | 85.5 | 745 |
| SPCM182510HG | | SPCM182510HT | | 175 | 250 | 100 | 75 | 164.8 | 215.4 | 85.5 | 718 |
| SPCM182513HG | | SPCM182513HT | | 175 | 250 | 125 | 75 | 164.3 | 214.9 | 110.5 | 855 |
| SPCM182515G | | SPCM182515T | | 175 | 250 | 150 | 50 | 164 | 214.5 | 135.5 | 946 |
| SPCM182518HG | | SPCM182518HT | | 175 | 250 | 175 | 75 | 163.5 | 214.1 | 160.5 | 983 |

Accessories (Optional parts)



Mounting bracket SFL-1
See page SPCM • SPCP-ACC-1



Mounting plate SMP series
See page SPCM • SPCP-ACC-1



Cable gland
See cable gland pages

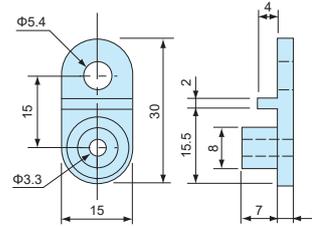
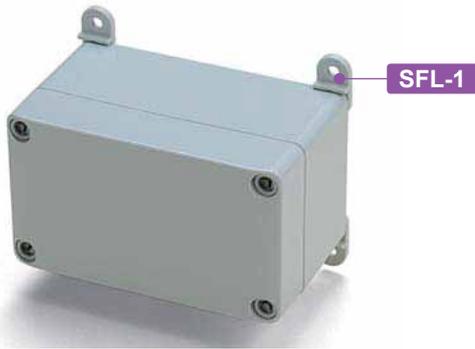


Terminal block • Terminal cover STB • STC series
See page STB • STC-1 ~ STB • STC-4



Pole mounting bracket & bolt SSK, PKB series
See page SSK-1 ~ SSK-4

SFL-1 PLASTIC MOUNTING BRACKET



Product no. / Feature

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

SMS4-8 MOUNTING SCREW



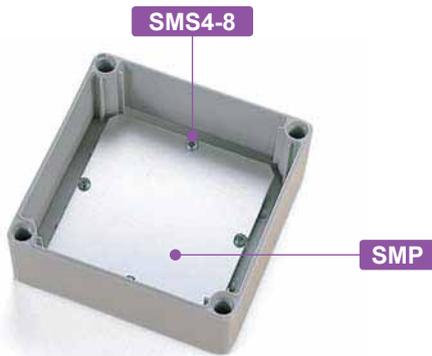
- Mounting screws for PCB mounting on SPCP • SPCM series.
※1 set included with each SPCP • SPCM enclosure.

Product no. / Feature

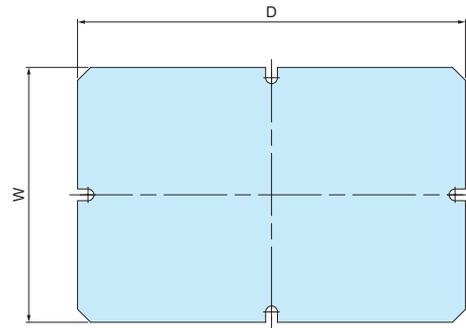
| Product no. | Material | Screw | Pcs |
|--------------------------------|----------|--------------------|-----|
| SMS4-8 (M4-8 Pan head tapping) | Steel | Trivalent chromate | 4 |

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 |

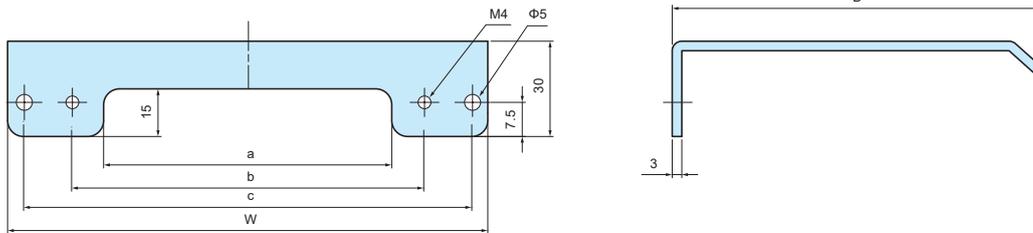
- Customization services (clinchng standoffs, hole milling, and others) available.
See website for more details.



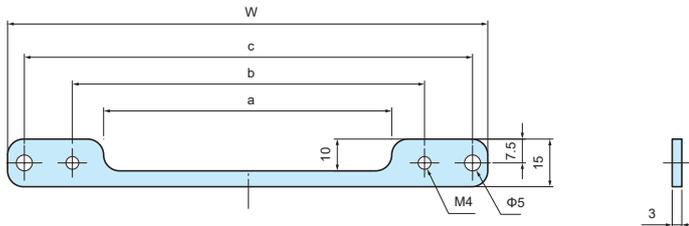


- Roof and spacer attachments are easily attached onto the enclosure using existing cover fastening holes.
- Recommended for outdoor environments for protection against rain, etc.

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

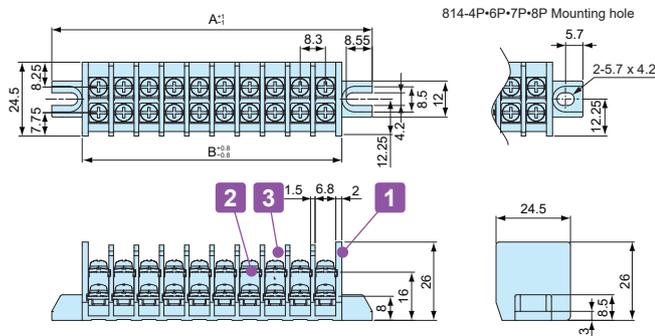


■ Terminal block for SPCM • SPCP series.

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 |

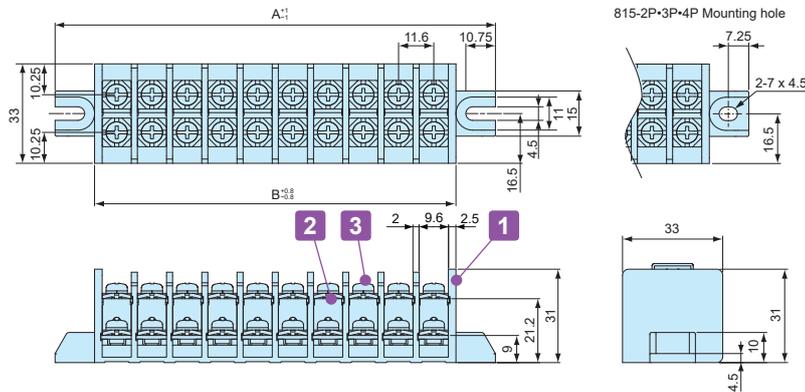
STB-814



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 |

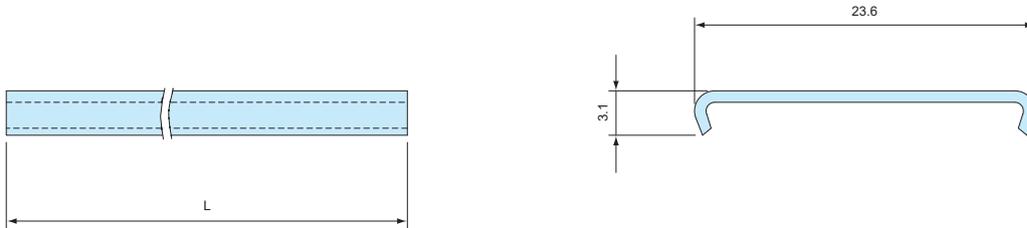
STC SERIES

TERMINAL COVER

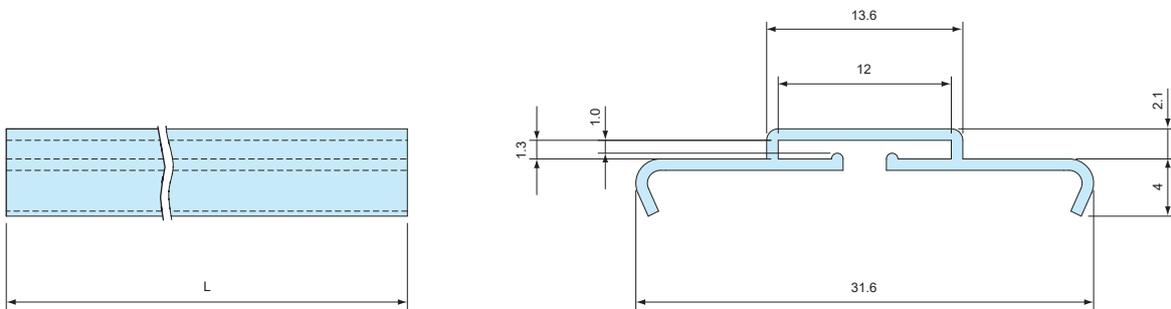


- Terminal cover for STB terminal block.
- Use for protecting terminals.

STC814



STC815



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

Product no. / Dimensions

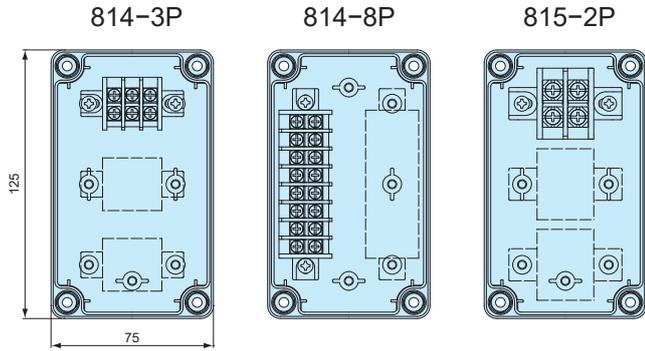
| Product no. | P (Number of poles) | L | Compatible terminal |
|-------------|---------------------|-------|---------------------|
| STC814- 3P | 3 | 22.4 | STB814- 3P |
| STC814- 4P | 4 | 30.7 | STB814- 4P |
| STC814- 6P | 6 | 47.3 | STB814- 6P |
| STC814- 7P | 7 | 55.6 | STB814- 7P |
| STC814- 8P | 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

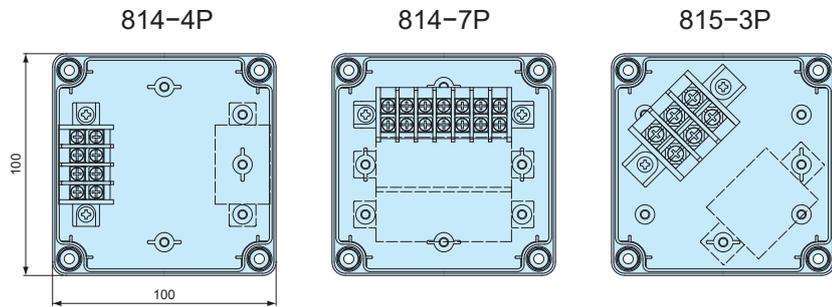
■ Drawings below are reference examples only.
DXF/DWG/PDF drawings available on our website.

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

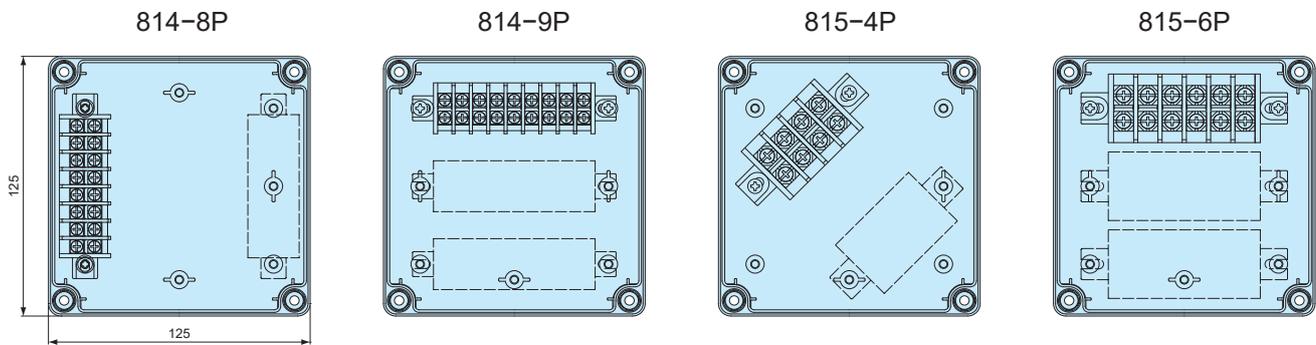
Suitable box SPCM/SPCP 081305 • 081306 • 081308 • 081310 • 081313



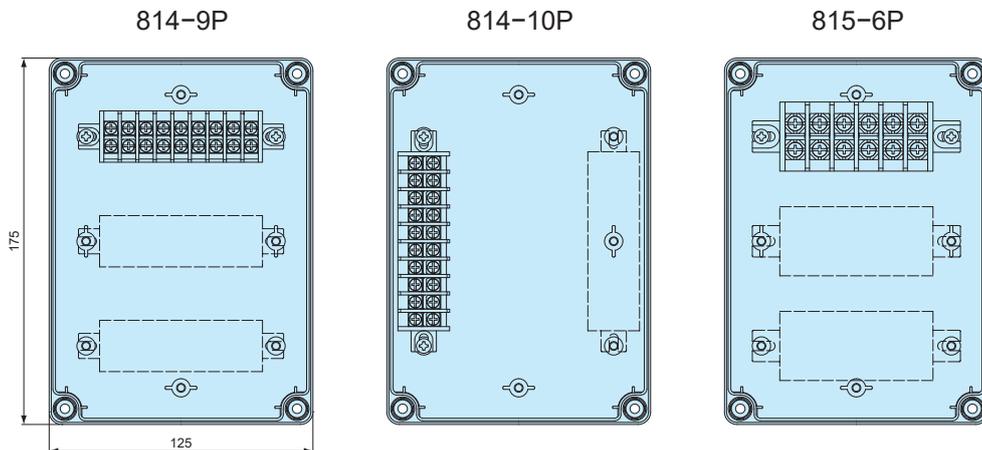
Suitable box SPCM/SPCP 101006



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



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



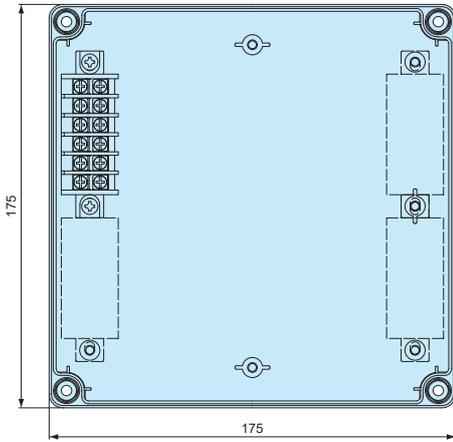
STB TERMINAL BLOCK MOUNTING POSITION

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

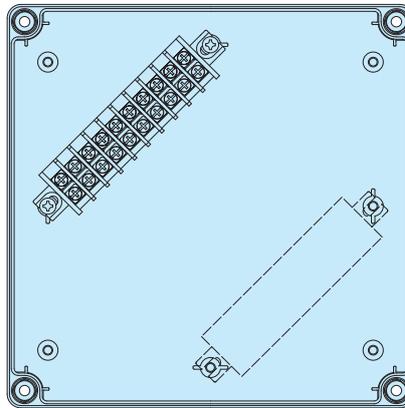
■ Terminals can be installed in the area with dotted lines.

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

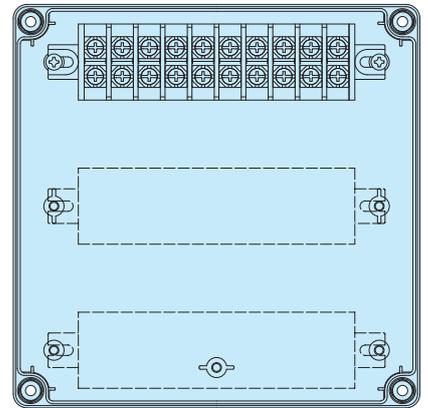
814-6P



814-10P

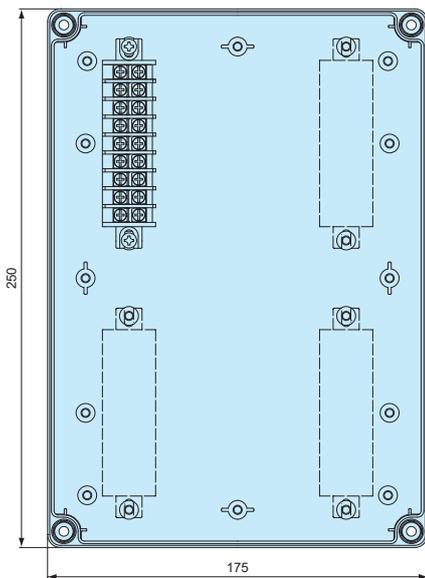


815-10P

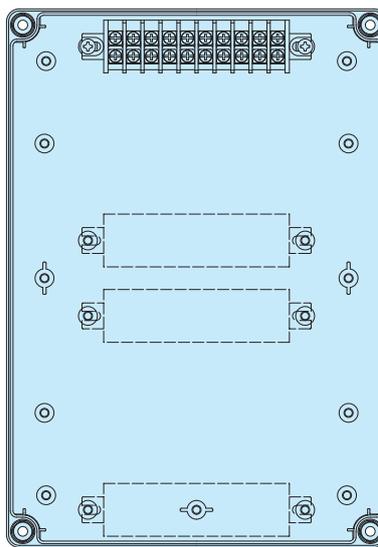


Suitable box SPCM/SPCP 182508 • 182510 • 182515

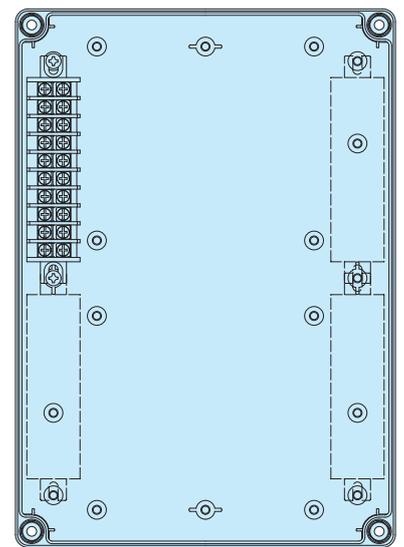
814-9P



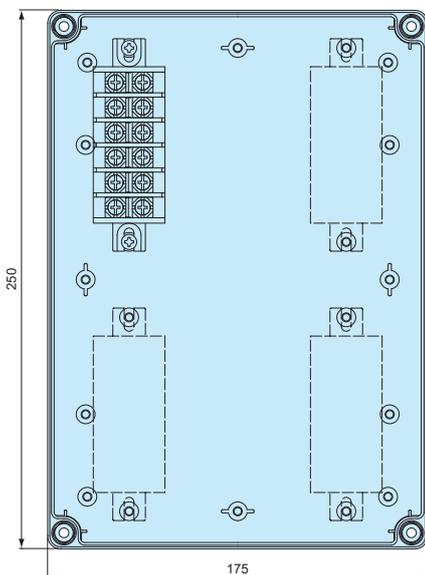
814-10P



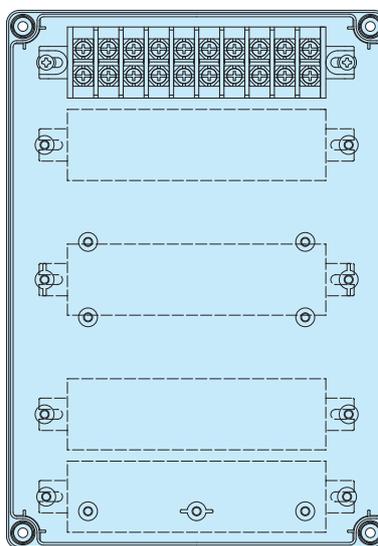
814-10P



815-6P

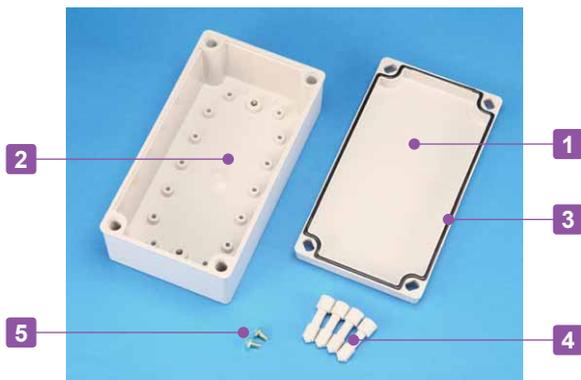
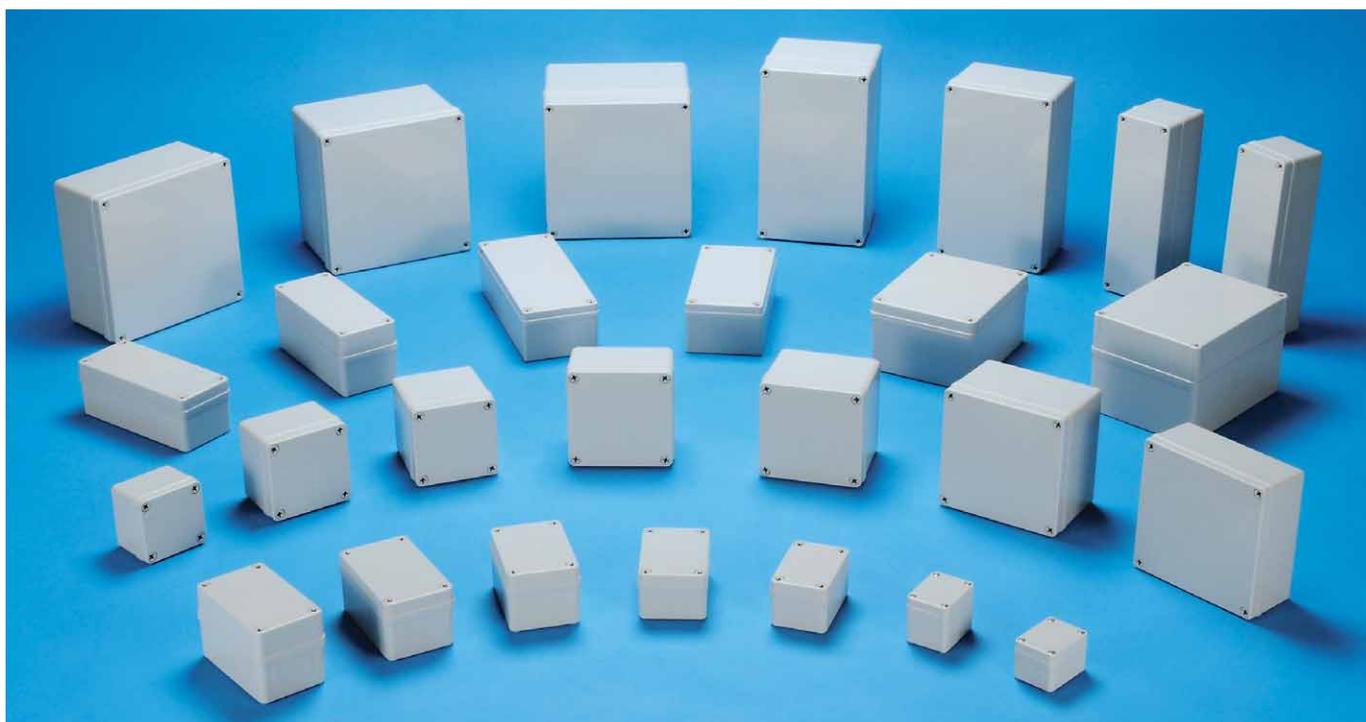


815-10P



BCAS SERIES

IP65 PLASTIC PULL BOX



IP65

Technical Data

Protection class: IP65
 Operating temperature: -10°C ~ +60°C
 Recommended torque:
 1N · m ~ 1.5N · m
 (1N · m for BCAS050604G, BCAS050605G)

- Small-sized frontal screw fastening type waterproof box.
- Available in 39 different sizes.
- Applicable for various uses as wiring pull box, terminal junction box, switch box and so on.

Components

| No. | Part name | Pcs | Material | Color / Finish |
|-----|------------------------------------|-------|--|-------------------------|
| 1 | Top cover | 1 | ABS UL94HB | White gray |
| 2 | Body | 1 | ABS UL94HB | White gray |
| 3 | Gasket | 1 | Polyurethane | Black |
| 4 | Cover screw | 4 | Nylon · Stainless steel (BCAS050604G and BCAS050605G only) | White gray · Unfinished |
| 5 | Tapping screw (for mounting plate) | 2 ~ 4 | Steel | Trivalent chromate |

APPLICATION EXAMPLE

SWITCH BOX



TERMINAL JUNCTION BOX



AIR PIPE CONTROLLER



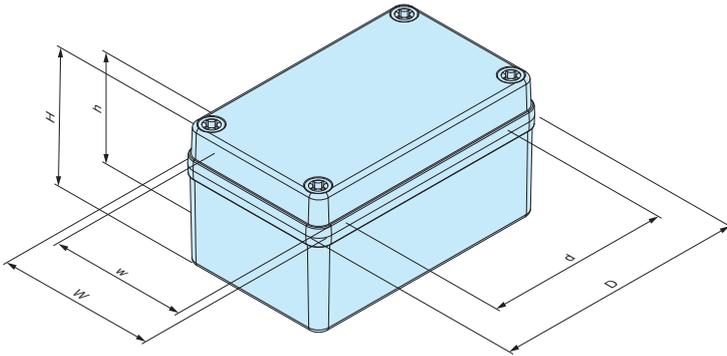
METEOROLOGICAL MONITOR TRANSMITTER



Product by Midori Engineering Laboratory (Japan)

BCAS dimensions

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



◎ : Guide markings for installation of optional latch/hinge parts.



Product no. / Dimensions

| Product no. | Dimensions (External) | | | Dimensions (Internal) | | | Weight (g) |
|-------------|-----------------------|-------|-------|-----------------------|-------|-------|------------|
| | W | D | H | w | d | h | |
| BCAS050604G | 50 | 65 | 45 | 43.5 | 41 | 33 | 69 |
| BCAS050605G | 50 | 65 | 55 | 43.5 | 41 | 43 | 76 |
| BCAS060905G | 65 | 95 | 55 | 55.5 | 59 | 41.5 | 124 |
| BCAS071005G | 75 | 105 | 55 | 66 | 69 | 41.3 | 148 |
| BCAS080806G | 80 | 80 | 60 | 70.5 | 44 | 46.4 | 133 |
| BCAS081104G | 80 | 110 | 45 | 71 | 74 | 32.2 | 138 |
| BCAS081107G | 80 | 110 | 70 | 69.5 | 73.5 | 57 | 165 |
| BCAS081108G | 80 | 110 | 85 | 70 | 75 | 71.8 | 191 |
| BCAS081110G | 80 | 110 | 100 | 70 | 75 | 86.2 | 227 |
| BCAS081307G | 80.5 | 130 | 70 | 70.5 | 94 | 56.5 | 188 |
| BCAS081308G | 80 | 130 | 85 | 70.5 | 94 | 71.5 | 222 |
| BCAS081807G | 80 | 180 | 70 | 70.5 | 143.5 | 57 | 233 |
| BCAS081808G | 80 | 180 | 85 | 70.5 | 143.5 | 71.5 | 275 |
| BCAS082507G | 80 | 250 | 70 | 70 | 213.5 | 56.5 | 294 |
| BCAS082508G | 80 | 250 | 85 | 70 | 213.5 | 71.5 | 348 |
| BCAS101007G | 101.5 | 101.5 | 75 | 91 | 64 | 61.5 | 212 |
| BCAS101010G | 101.5 | 101.5 | 100 | 90 | 64 | 86.5 | 253 |
| BCAS101807G | 100 | 185 | 70 | 90 | 148.5 | 56.7 | 298 |
| BCAS102007G | 100 | 200 | 70 | 90.5 | 163.5 | 56.5 | 282 |
| BCAS102307G | 100 | 230 | 70 | 90.5 | 193.5 | 56.4 | 336 |
| BCAS121207G | 125 | 125 | 75 | 114 | 88.5 | 62 | 252 |
| BCAS121210G | 125 | 125 | 100 | 114 | 87.5 | 87 | 311 |
| BCAS141709G | 143 | 173 | 95 | 133 | 134 | 82 | 416 |
| BCAS142309G | 140 | 230 | 95 | 129 | 193 | 81.5 | 485 |
| BCAS151507G | 150 | 150 | 75 | 140 | 114 | 61.5 | 322 |
| BCAS151510G | 150 | 150 | 100 | 139 | 114 | 86.5 | 398 |
| BCAS152004G | 150 | 200 | 46 | 140 | 164 | 32.4 | 335 |
| BCAS152007G | 150 | 200 | 75.5 | 138 | 164 | 61.5 | 423 |
| BCAS152010G | 150 | 200 | 100.5 | 139 | 161.5 | 86.5 | 473 |
| BCAS152013G | 150 | 200 | 130.5 | 139.5 | 161 | 116.5 | 582 |
| BCAS152016G | 150 | 200 | 160 | 139 | 163 | 146.5 | 631 |
| BCAS152510G | 150 | 250 | 100 | 139.5 | 214 | 86.4 | 565 |
| BCAS152513G | 150 | 250 | 130 | 139.5 | 214 | 116.4 | 687 |
| BCAS161607G | 160 | 160 | 70 | 150 | 123.5 | 56.5 | 334 |
| BCAS202010G | 200 | 200 | 100 | 189 | 164.5 | 86 | 604 |
| BCAS202013G | 200 | 200 | 130 | 189 | 164.5 | 117 | 685 |
| BCAS202016G | 201 | 201 | 161 | 187.5 | 164.5 | 147 | 801 |
| BCAS202019G | 201 | 201 | 190 | 187.5 | 164.5 | 176.3 | 907.5 |
| BCAS212310G | 210 | 230 | 100.3 | 198.8 | 194.2 | 87.1 | 644.5 |

Accessories (Optional parts)



Mounting plate BMP series
See page BCAS-3 ~ BCAS-4



Latch • Hinge BCL55 • BCH55
See page BCAS • BCAL-ACC-1



Spare cover screw CB series
See page BCAS • BCAL-ACC-3



Mounting bracket CK series
See page BCAS • BCAL-ACC-2



Cable gland
See cable gland pages

BMP-Z SERIES

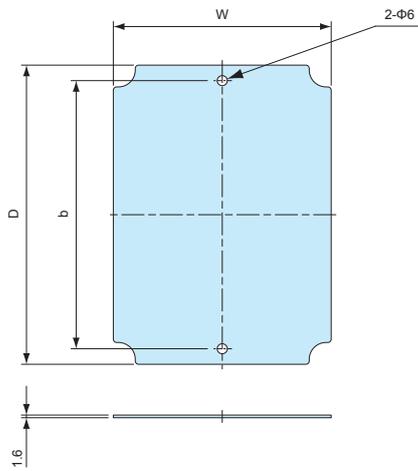
STEEL MOUNTING PLATE



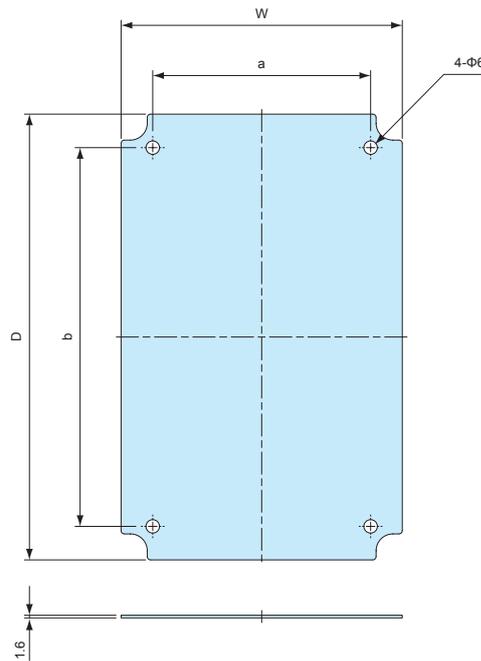
■ Strong but easily customizable.

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

BMP0506Z ~ 1525Z



BMP2020Z, 2123Z



Components

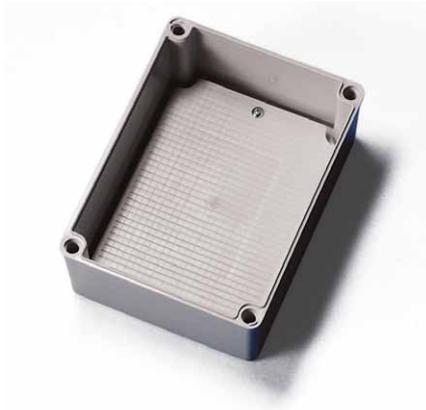
| Part name | Material | Color / Finish |
|----------------|-------------|----------------|
| Mounting plate | Steel t=1.6 | Zinc coated |

Product no. / Dimensions

| Product no. | W | D | a | b | Suitable box | Weight (g) |
|-------------|-----|-----|-----|-----|--|------------|
| BMP0506Z | 41 | 56 | - | 40 | BCAS050604, 050605 | 23 |
| BMP0609Z | 52 | 82 | - | 65 | BCAS060905 | 41 |
| BMP0710Z | 62 | 92 | - | 75 | BCAS071005 | 63 |
| BMP0808Z | 67 | 67 | - | 50 | BCAS080806 | 47 |
| BMP0811Z | 68 | 98 | - | 80 | BCAS081104, 081107, 081108, 081110 | 72 |
| BMP0813Z | 68 | 118 | - | 99 | BCAS081307, 081308 | 87 |
| BMP0818Z | 69 | 169 | - | 150 | BCAS081807, 081808 | 134 |
| BMP0825Z | 69 | 239 | - | 220 | BCAS082507, 082508 | 193 |
| BMP1010Z | 86 | 86 | - | 60 | BCAS101007, 101010 | 80 |
| BMP1018Z | 89 | 173 | - | 139 | BCAS101807 | 177 |
| BMP1121Z | 77 | 177 | - | 158 | BCAS102007 | 159 |
| BMP1023Z | 88 | 218 | - | 184 | BCAS102307 | 226 |
| BMP1212Z | 114 | 114 | - | 70 | BCAS121207, 121210 | 151 |
| BMP1417Z | 132 | 162 | - | 130 | BCAS141709 | 251 |
| BMP1423Z | 123 | 213 | - | 190 | BCAS142309 | 305 |
| BMP1515Z | 121 | 121 | - | 110 | BCAS151507, 151510 | 172 |
| BMP1616Z | 142 | 142 | - | 120 | BCAS161607 | 237 |
| BMP1520Z | 126 | 176 | - | 160 | BCAS152004, 152007, 152010, 152013, 152016 | 262 |
| BMP1525Z | 127 | 227 | - | 210 | BCAS152510, 152513 | 346 |
| BMP2020Z | 176 | 176 | 120 | 150 | BCAS202010, 202013, 202016, 202019 | 371 |
| BMP2123Z | 183 | 203 | 160 | 180 | BCAS212310 | 447 |

BMP-P SERIES

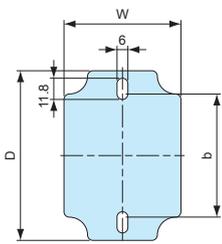
PLASTIC MOUNTING PLATE



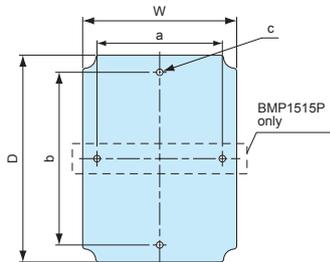
- Lightweight ABS plastic mounting plate.
- Not available for BCAS050604, 050605, 060905, 071005, 080806, 101807, 102307, and 212310 models.

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

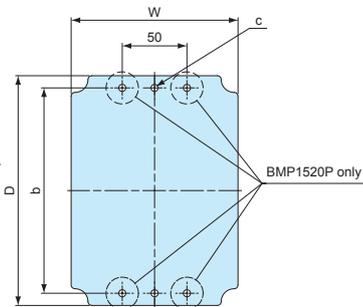
BMP0811P



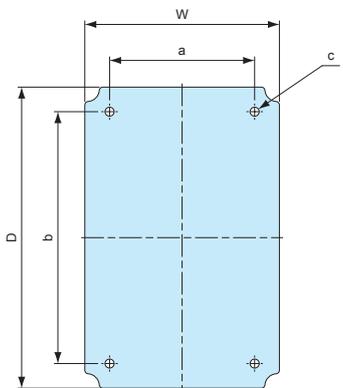
BMP0813P ~ 1616P



BMP0825P, 1423P, 1520P, 1525P



BMP2020P



Components

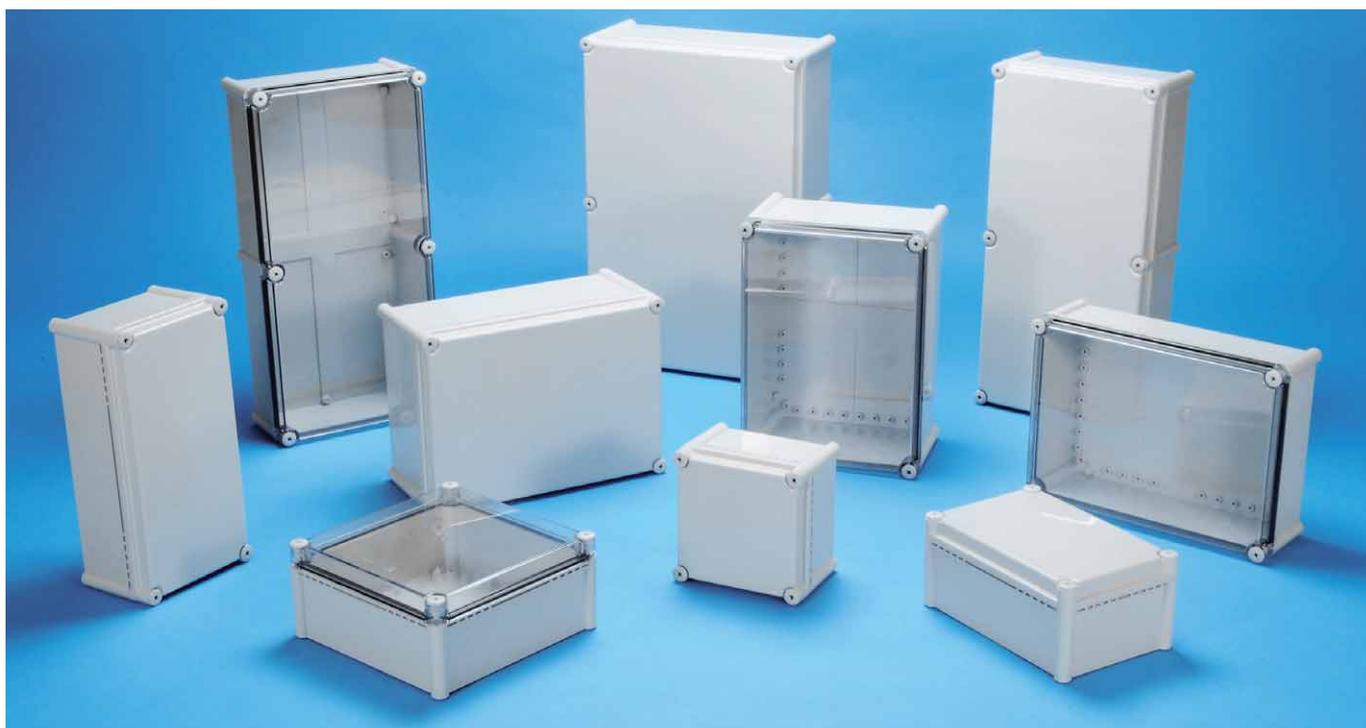
| Part name | Material | Color / Finish |
|----------------|----------|----------------|
| Mounting plate | ABS | White gray |

Product no. / Dimensions

| Product no. | W | D | a | b | c(Φ) | Thickness | Suitable box | Weight (g) |
|-------------|-------|-------|-----|-------|------|-----------|--|------------|
| BMP0811P | 64.5 | 94.3 | - | 68.4 | - | 3.5 | BCAS081104, 081107, 081108, 081110 | 21 |
| BMP0813P | 64.5 | 114.5 | - | 99 | Φ6 | 3.5 | BCAS081307, 081308 | 24 |
| BMP0818P | 64.5 | 164 | - | 148.5 | Φ6 | 3.5 | BCAS081807, 081808 | 37 |
| BMP0825P | 64.2 | 234.5 | - | 219.5 | Φ6 | 3.5 | BCAS082507, 082508 | 59 |
| BMP1010P | 81.5 | 81.2 | - | 60 | Φ6 | 3.5 | BCAS101007, 101010 | 22 |
| BMP1121P | 76.5 | 175.8 | - | 157.8 | Φ6 | 3 | BCAS102007 | 40 |
| BMP1212P | 107 | 107 | - | 70 | Φ5.5 | 3.5 | BCAS121207, 121210 | 39 |
| BMP1417P | 125.5 | 155.5 | - | 130 | Φ6 | 3.5 | BCAS141709 | 69 |
| BMP1423P | 122.6 | 212.5 | - | 190 | Φ5.5 | 3.7 | BCAS142309 | 103.5 |
| BMP1515P | 123 | 123 | 110 | 110 | Φ6 | 3.5 | BCAS151507, 151510 | 52 |
| BMP1616P | 143.5 | 143.5 | - | 120 | Φ6 | 3.2 | BCAS161607 | 66 |
| BMP1520P | 129 | 179 | - | 160 | Φ5.5 | 3.5 | BCAS152004, 152007, 152010, 152013, 152016 | 92 |
| BMP1525P | 129 | 228.5 | - | 210 | Φ6 | 3.5 | BCAS152510, 152513 | 112 |
| BMP2020P | 178.5 | 178.5 | 120 | 150 | Φ5.5 | 3.5 | BCAS202010, 202013, 202016, 202019 | 125 |

BCAL SERIES

IP65 PLASTIC BOX



Technical Data



Protection class: IP65
 Operating temperature: -10°C ~ +60°C
 Recommended torque: 1N • m ~ 1.5N • m



- Large-sized frontal screw fastening type waterproof box.
- 11 different sizes available.
- Applicable for uses in various fields such as FA, control box, network communication, and so on.
- 2 different top cover models (ABS-White gray • Polycarbonate-Transparent) are available.
- Guide markings are available for installation of optional latch/hinge parts.

◎ : Guide markings

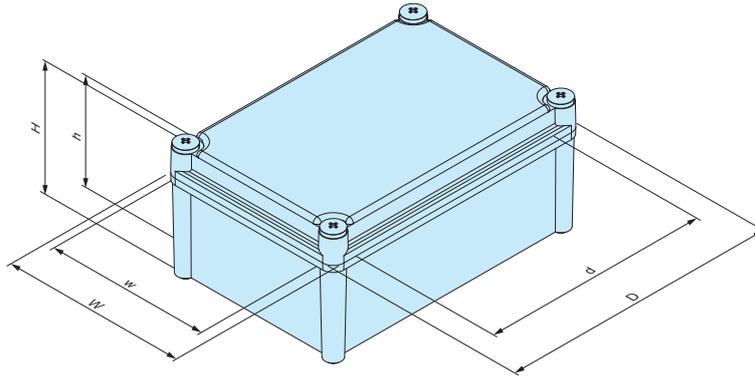


Components

| No. | Part name | Pcs | Material | Color / Finish |
|-----|------------------------------------|-------|--------------------------------------|--------------------------|
| 1 | Top cover | 1 | ABS UL94HB • Polycarbonate (UL94V-0) | White gray • Transparent |
| 2 | Body | 1 | ABS UL94HB | White gray |
| 3 | Gasket | 1 | Polyurethane | Black |
| 4 | Cover screw | 4 ~ 6 | Nylon | White gray • Unfinished |
| 5 | Tapping screw (for mounting plate) | 4 | Steel | Trivalent chromate |

BCAL dimensions

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



Product no. / Dimensions

| Product no. | | Product no. | | Dimensions (External) | | | Dimensions (Internal) | | | Weight (g) |
|--------------|------|---------------|--------------|-----------------------|-----|-----|-----------------------|-------|-------|------------|
| G type | | T type | | W | D | H | w | d | h | |
| Top cover | Body | Top cover | Body | | | | | | | |
| ● White gray | | ○ Transparent | ● White gray | | | | | | | |
| BCAL191913G | | BCAL191913T | | 190 | 190 | 128 | 167 | 140 | 111.5 | 722 |
| BCAL192813G | | BCAL192813T | | 190 | 280 | 128 | 166 | 229 | 111.5 | 896 |
| BCAL192818G | | BCAL192818T | | 190 | 280 | 178 | 164 | 230 | 162 | 1,009 |
| BCAL193813G | | BCAL193813T | | 190 | 380 | 128 | 167 | 329 | 111 | 1,143 |
| BCAL193818G | | BCAL193818T | | 190 | 380 | 178 | 165 | 327.5 | 162 | 1,258 |
| BCAL282813G | | BCAL282813T | | 280 | 280 | 128 | 256 | 229 | 112 | 1,148 |
| BCAL283413G | | BCAL283413T | | 280 | 340 | 128 | 255.5 | 287 | 111.8 | 1,441 |
| BCAL283813G | | BCAL283813T | | 280 | 380 | 128 | 256 | 329 | 111.5 | 1,423 |
| BCAL283818G | | BCAL283818T | | 280 | 380 | 178 | 254 | 324 | 161.5 | 1,745 |
| BCAL285613G | | BCAL285613T | | 280 | 560 | 128 | 255 | 507 | 112 | 2,272 |
| BCAL385618G | | BCAL385618T | | 380 | 560 | 178 | 354 | 505 | 159.7 | 2,948 |

Accessories (Optional parts)



Mounting plate BMP series
See page BCAL-3



Latch • Hinge BCL65 • BCH65
See page BCAS • BCAL-ACC-1



Spare Cover screw CB28 series
See page BCAS • BCAL-ACC-3



Mounting bracket CK-26P
See page BCAS • BCAL-ACC-2



Cable gland
See cable gland pages

APPLICATION EXAMPLE

CONTROL BOX



INCLINOMETER for Bridge Construction
Product by Akasakatec Inc. (Japan)



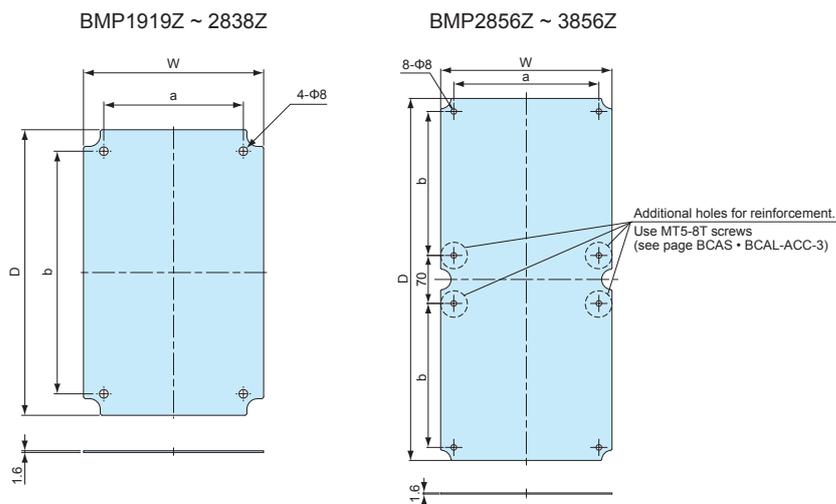
BMP-Z SERIES

STEEL MOUNTING PLATE



DXF/DWG/PDF drawings available on our website.

- Strong but easily customizable.
- Material/Finish : Steel t=1.6mm / Zinc coated



Product no. / Dimensions

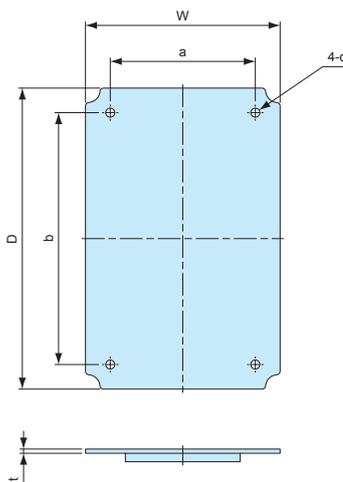
| Product no. | W | D | a | b | Suitable box | Weight (g) |
|-------------|-----|-----|-----|-----|--------------------|------------|
| BMP1919Z | 159 | 159 | 120 | 120 | BCAL191913 | 303 |
| BMP1928Z | 157 | 247 | 120 | 210 | BCAL192813, 192818 | 462.5 |
| BMP1938Z | 159 | 347 | 120 | 310 | BCAL193813, 193818 | 676.5 |
| BMP2828Z | 246 | 246 | 210 | 210 | BCAL282813 | 727.5 |
| BMP2834Z | 246 | 306 | 210 | 270 | BCAL283413 | 920 |
| BMP2838Z | 246 | 346 | 210 | 310 | BCAL283813, 283818 | 1,018 |
| BMP2856Z | 248 | 528 | 210 | 210 | BCAL285613 | 1,571 |
| BMP3856Z | 348 | 528 | 310 | 210 | BCAL385618 | 2,210 |

BMP-P SERIES

PLASTIC MOUNTING PLATE



- Not available for BCAL283413, 285613, and 385618 models.
- Material/Color : ABS / White gray



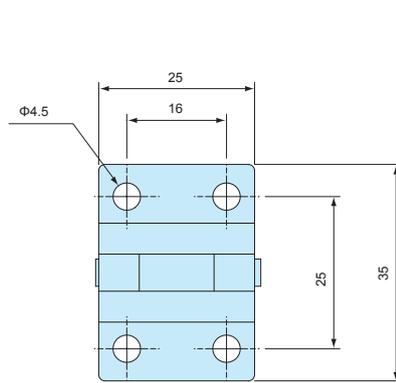
Product no. / Dimensions

| Product no. | W | D | a | b | c (Φ) | t | Suitable box | Weight (g) |
|-------------|-------|-------|-----|-------|-------|-----|--------------------|------------|
| BMP1919P | 159 | 159 | 120 | 120 | Φ8 | 4 | BCAL191913 | 104 |
| BMP1928P | 158.5 | 248 | 120 | 210 | Φ8 | 3.5 | BCAL192813, 192818 | 162 |
| BMP1938P | 159 | 348 | 120 | 310 | Φ8 | 4.5 | BCAL193813, 193818 | 236 |
| BMP2828P | 248.5 | 248.5 | 210 | 210 | Φ8 | 4 | BCAL282813 | 237 |
| BMP2838P | 248 | 347.5 | 209 | 309.5 | Φ8 | 4 | BCAL283813, 283818 | 368 |

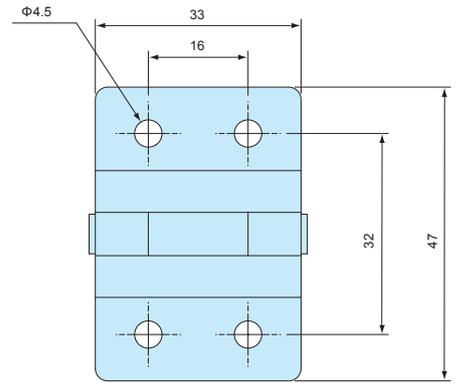
BCH SERIES

HINGE for BCAS • BCAL

■ Refer to ☉ guide markings on BCAS • BCAL box when installing.



BCH55



BCH65

Components

| Part name | Pcs | Material | Color / Finish |
|-----------|-----|------------------------|----------------|
| Hinge | 1 | Stainless steel SUS304 | Unfinished |
| Bracket | 2 | Stainless steel SUS304 | Unfinished |
| Gasket | 2 | EPDM | Black |

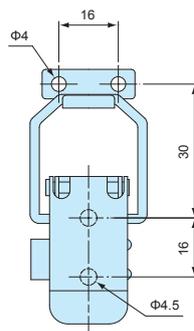
Product no. / Suitable box

| Product no. | Suitable box | Included screw |
|-------------|---|------------------|
| BCH55 | BCAS series Not available for BCAS050604, 050605, 060905, 071005, 080806, 081104, 101807, 102007, 102307, 152004, and 161607 models. | Truss head M4-10 |
| BCH65 | BCAL series | Truss head M4-10 |

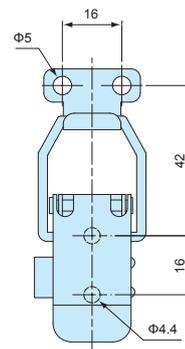
BCL SERIES

LATCH for BCAS • BCAL

■ Refer to ☉ guide markings on BCAS • BCAL box when installing.



BCL55



BCL65

Components

| Part name | Pcs | Material | Color / Finish |
|-----------|-----|------------------------|----------------|
| Latch | 1 | Stainless steel SUS304 | Unfinished |
| Hook | 1 | Stainless steel SUS304 | Unfinished |
| Bracket | 2 | Stainless steel SUS304 | Unfinished |
| Gasket | 2 | EPDM | Black |

Product no. / Suitable box

| Product no. | Suitable box | Included screw |
|-------------|---|------------------|
| BCL55 | BCAS series Not available for BCAS050604, 050605, 060905, 071005, 080806, 081104, 101807, 102007, 102307, 152004, and 161607 models. | Truss head M4-10 |
| BCL65 | BCAL series | Truss head M4-10 |

BCM SERIES

BLIND PLUG for BCAS • BCAL



- Blind plug for BCAS • BCAL when installing hinges and latches.
Not usable when using cover screws.

Components

| Part name | Material | Color |
|------------|----------|------------|
| Blind plug | ABS | White gray |

Product no. / Suitable box

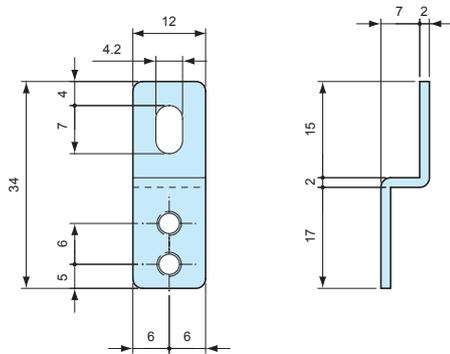
| Product no. | Suitable box | Pack of |
|-------------|---|---------|
| BCM-1 | BCAS series (Not available for BCAS050604, 050605 models) | 1 |
| BCM-2 | BCAL series | 1 |

CK SERIES

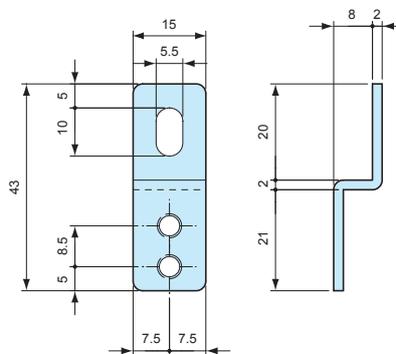
STAINLESS STEEL MOUNT BRACKET



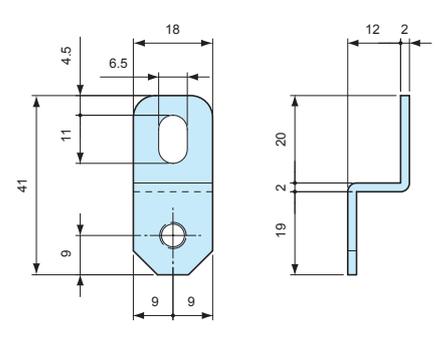
CK-34Z dimensions



CK-35P dimensions



CK-26P dimensions



- CK-34Z model requires the use of MT4-10 screw.

Product no. / Suitable box

| Product no. | Material | Finish | Suitable box | Included screw | Pack of |
|-------------|------------------------|---------------|--|------------------------|---------|
| CK-34Z | Stainless steel SUS304 | Barrel finish | BCAS series (Not applicable for BCAS050604, 050605 models) | - | 4 |
| CK-35P | Stainless steel SUS304 | Barrel finish | BCAS050604G, BCAS050605G | Pan head tapping M4-10 | 4 |
| CK-26P | Stainless steel SUS304 | Barrel finish | BCAL series | Pan head M5-10 | 4 |

MT4-10

MOUNTING SCREW

- Use together with CK-34Z.

Product no. / Feature

| Product no. | Material | Finish | Pack of |
|-------------------------|-----------------|------------|---------|
| MT4-10 (Pan head M4-10) | Stainless steel | Unfinished | 4 |

MT SERIES

PCB MOUNTING SCREW



■ Mounting screw for the bosses without insert-nut.

Product no. / Feature

| Product no. | Material | Finish | Pack of |
|------------------------------------|----------|--------------------|---------|
| MT4-8T (Binding head tapping M4-8) | Steel | Trivalent chromate | 20 |
| MT5-8T (Binding head tapping M5-8) | Steel | Trivalent chromate | 20 |

Suitable box chart

| Product no. | Suitable box | Tightening torque |
|-------------|--|-------------------|
| MT4-8T | BCAS071005, 081104, 081107, 081108, 081110, 081307, 081308, 081807, 081808, 082507, 082508, 101007, 101010, 101807, 102007, 102307, 121207, 121210, 141709, 142309, 151507, 151510, 152004, 152007, 152010, 152013, 152016, 152510, 152513, 161607, 202010, 202013, 202016, 202019, and 212310 models. | 0.7N • m |
| MT5-8T | BCAL series | 1.4N • m |

CB SERIES

SPARE COVER SCREW for BCAS



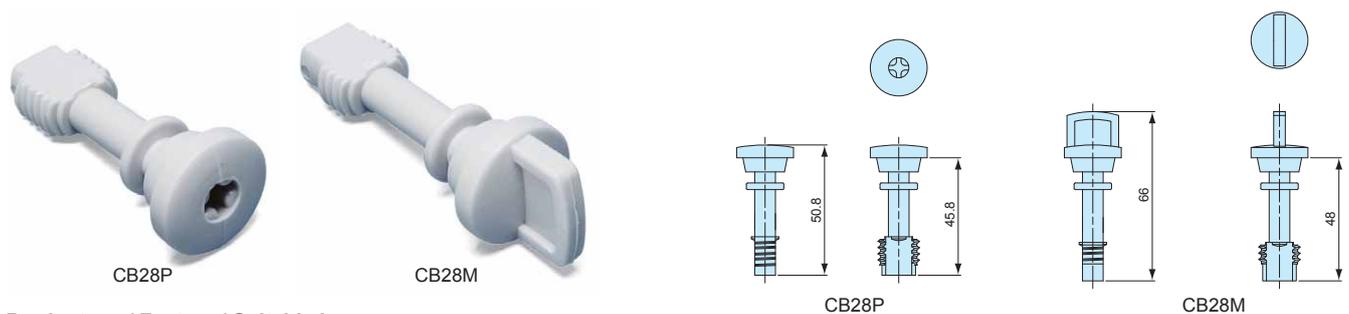
Product no. / Feature / Suitable box

| Product no. | Material | Color | Pack of |
|-------------|--------------------|------------|---------|
| CB20 | Fiberglass • Nylon | White gray | 1 |
| CB35 | Fiberglass • Nylon | White gray | 1 |
| CB50 | Fiberglass • Nylon | White gray | 1 |

| Product no. | Suitable box |
|-------------|--|
| CB20 | BCAS060905, 071005, 080806, 081104, 081107, 081108, 081307, 081807, 082507, 101007, 101010, 101807, 102007, 102307, 121207, 121210, 141709, 142309, 151507, 151510, 152004, 152007, 152010, 152013, 152510, 161607, 202010, 202013, 202016, and 212310 models TMB-15PS, 20P, 20PL |
| CB35 | BCAS081110, 081308, 081808, and 082508 models |
| CB50 | BCAS152016, 152513, and 202019 models |

CB SERIES

SPARE COVER SCREW for BCAL



Product no. / Feature / Suitable box

| Product no. | Material | Color | Suitable box | Pack of |
|-------------|--------------------|------------|--------------|---------|
| CB28P | Fiberglass • Nylon | White gray | BCAL series | 1 |
| CB28M | Fiberglass • Nylon | White gray | BCAL series | 1 |

SSK SERIES

POLE MOUNTING BRACKET

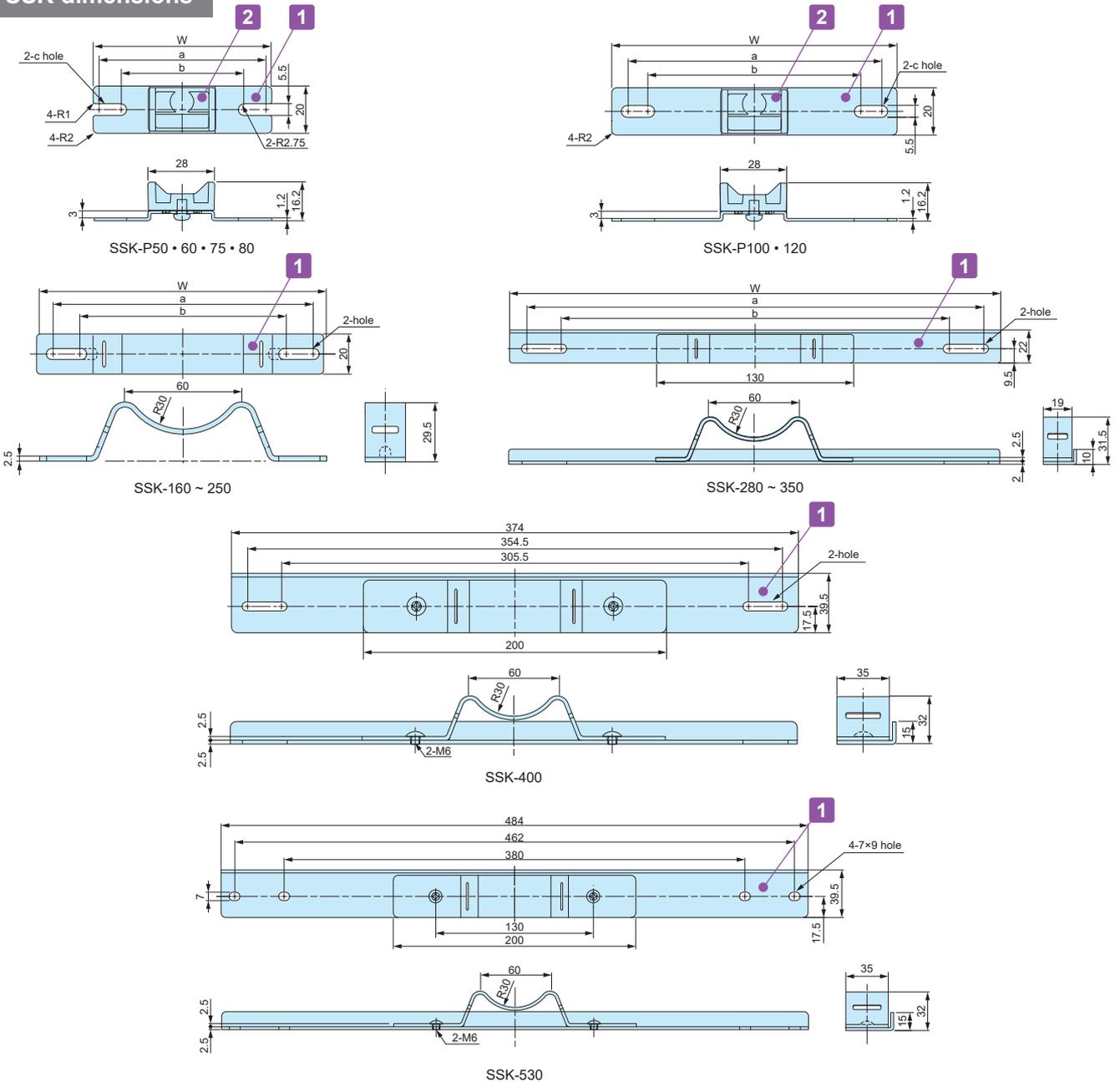


- Stainless steel pole mounting bracket for SPCM • SPCP and BCAL • BCAS series.
- Easy pole mount with the use of SSK-B mounting screw and PKB mounting belt.
- DXF/DWG/PDF drawings available on our website.
- SSK-P models includes plastic mounting brackets.



PKB series

SSK dimensions



SSK-1

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



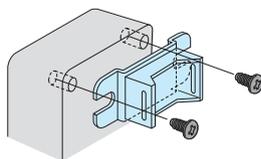
- Mounting screw set for use with SSK pole mounting bracket.
- See chart on page SSK-3 for appropriate bracket/screw/box combination.
- Material / Finish : Stainless steel / Unfinished.

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 |

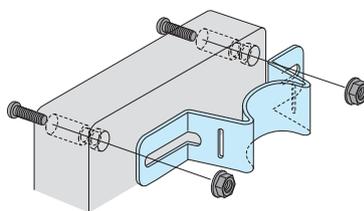
■ Installation Example

BCAS050604, 050605



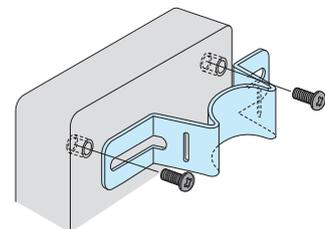
Use screws included with SSK-P

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 |

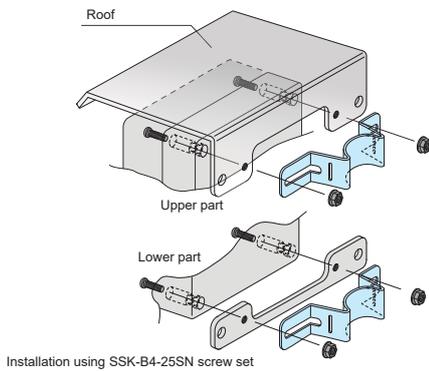
※Use screws included with SSK bracket for vertical mount

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 |

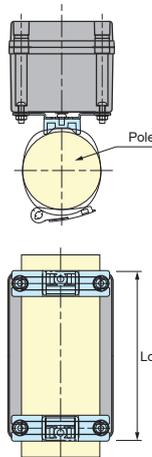
※Use screws included with SSK bracket for vertical mount

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

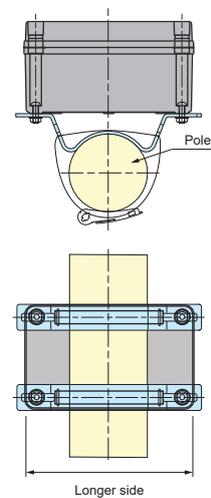


- Select SSK bracket depending on mounting type (Vertical or Horizontal).

Vertical mount
(Longer vertical side)



Horizontal mount
(Longer horizontal side)





| Technical Data | |
|--|---|
| Protection class : IP65 | { Waterproof switch Exclusive cable gland } required |
| Operating Temperature : -20°C ~ +75°C | |
| Recommended torque : 1N · m ~ 1.5N · m | |



- IP65 switch box with 1 ~ 4 $\Phi 22$ hole(s) on the top cover.
- Made from flame retardant UL94V-0 high heat resistant polycarbonate material.
- $\Phi 22$ knock-outs on 2 opposite ends for easy wiring access if required.
- Exclusive cable gland, B131210G for $\Phi 22$ knock-outs is available as optional parts.
- IP65 protection class is maintained with waterproof switches and the exclusive cable glands installed.
- Yellow/Black color types available as BTO (built-to-order) at a MOQ of 500 pcs. For custom color order, the material would be changed to ABS UL94HB, with an operating temperature of -10°C ~ +60°C.

Components

| No. | Part name | Pcs | Material | Color / Finish |
|-----|-------------|-----|--|----------------|
| 1 | Top cover | 1 | Polycarbonate UL94V-0 | Light gray |
| 2 | Base | 1 | Glass fiber filled polycarbonate UL94V-0 | Light gray |
| 3 | Gasket | 1 | Polyurethane | Black |
| 4 | Cover screw | 4 | Glass fiber filled nylon | White gray |

Accessories (Optional parts)



Exclusive cable gland B131210G
See page 330



Stainless steel mounting bracket CK-34Z
See website



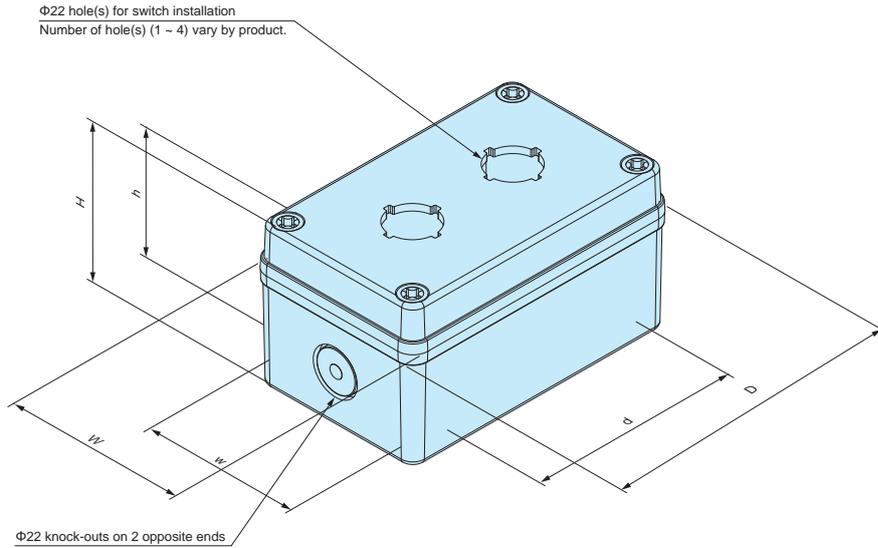
Spare cover screw CB20
See website



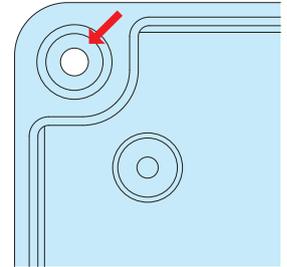
PCB mounting screw MT4-8T
See page 320

BCSB dimensions

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



■ Wall mounting without an optional wall mounting bracket is possible through inserting the wall mount screw directly into the cover screw hole on the base part.



Product no. / Dimensions

| Product no. | External dimensions | | | Internal dimensions | | | Switch hole(s) | Knock-outs | Weight (g) |
|------------------|---------------------|-------|------|---------------------|-----|------|----------------|------------|------------|
| | W | D | H | w | d | h | | | |
| BCSB081107-2201G | 80 | 110.5 | 70.3 | 67 | 67 | 55.8 | Φ22 x 1 | Φ22 x 2 | 204 |
| BCSB081307-2202G | 80.5 | 130.5 | 70 | 67 | 87 | 55.6 | Φ22 x 2 | Φ22 x 2 | 222 |
| BCSB081807-2203G | 80 | 180 | 70.5 | 67 | 137 | 56.3 | Φ22 x 3 | Φ22 x 2 | 278 |
| BCSB082507-2204G | 80 | 250 | 71 | 67 | 207 | 56.3 | Φ22 x 4 | Φ22 x 2 | 364 |

Accessories (Optional parts)

B131210G EXCLUSIVE CABLE GLAND for BCSB 

- Exclusive cable gland for Φ22 knock-outs on BCSB series switch box.
- The PG13.5 thread (Φ20.5) is a little smaller than Φ22 hole but is compatible for the Φ22 knock-out hole.
- Install B131210G into the very center of the Φ22 knock-out hole.
- Cap and connector are made from PA66 material, light gray color type. Sealing insert and O-ring are made from NBR material, black color type.

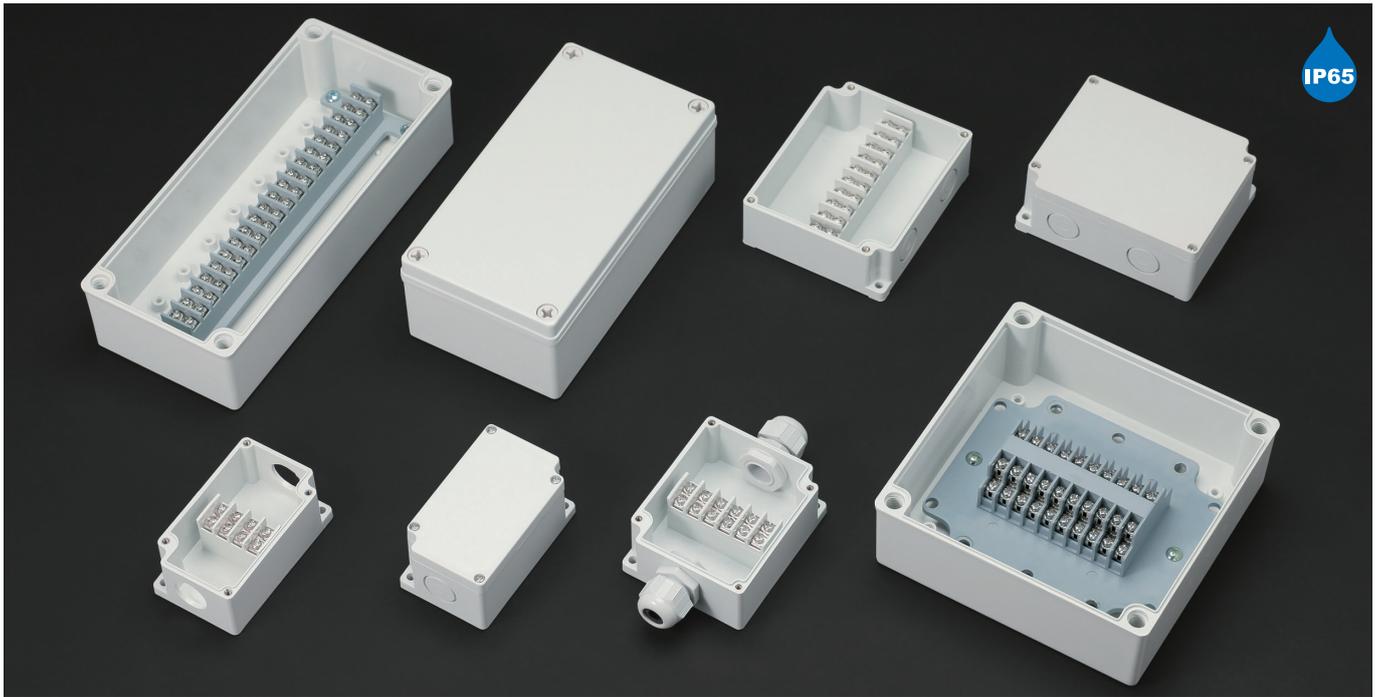
| Technical Data |
|---------------------------------------|
| Protection class : IP65 |
| Operating temperature : -20°C ~ +75°C |



Product no. / Dimensions

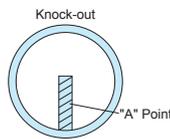
| Product no. | Cable range | | Suitable models | Weight (g) |
|-------------|-------------|-----|-----------------|------------|
| | Min | Max | | |
| B131210G | 7 | 11 | BCSB series | 12.7 |

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



- Terminal junction box with built-in terminal block.
- IP65 protection class.
- ABS and Glass fiber filled polycarbonate types are available.
- TMB-4P • 6P • 10P is molded with $\Phi 21.0\text{mm}$ metric knock-outs for M20 cable glands.
- 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.

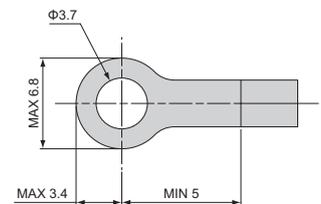
| Technical Data |
|--|
| Protection class : IP65 |
| Operating temperature : $-10^{\circ}\text{C} \sim +60^{\circ}\text{C}$ |
| Recommended torque : |
| TMB-4P • 6P • 10P : $0.6\text{N} \cdot \text{m}$ |
| TMB-15PCS • 20PC • 20PCL : $1\text{N} \cdot \text{m}$ |



Terminal Block Specification

| | |
|----------------------------|------------------------------|
| Rated voltage | 400V |
| Rated current | 17.5A |
| Applicable wire | 1.5mm^2 |
| Standard tightening torque | $0.8\text{N} \cdot \text{m}$ |

Applicable crimp terminal R1.25-3.5



Components

| No. | Part name | Pcs | Material | Color / Finish |
|-----|---|--------|---|--------------------|
| 1 | Top cover | 1 | TMB-4P • 6P • 10P : ABS UL94V-0 | White gray |
| | | | TMB-15PCS • 20PC • 20PCL : Polycarbonate UL94V-0 | Light gray |
| 2 | Body | 1 | TMB-4P • 6P • 10P : ABS UL94V-0 | White gray |
| | | | TMB-15PCS • 20PC • 20PCL : Glass fiber filled polycarbonate UL94V-0 | Light gray |
| 3 | Gasket | 1 | Polyurethane | Black |
| 4 | Conductive plate | 4 ~ 20 | Brass | Nickel plated |
| 5 | Terminal screw | 8 ~ 40 | Steel (M3.5) | Nickel plated |
| — | Terminal mount screw (15PCS, 20PC, 20PCL models only) | 2 ~ 4 | Steel | Trivalent chromate |
| 6 | Cover screw | 4 | Stainless steel • Nylon | Unfinished |

※ Cover screw material : Stainless steel - 4P, 6P, and 10P models • Nylon - 15PCS, 20PC, and 20PCL models.

Accessories (Optional parts)



Shorting bar SBR series
See website



Cable gland
See page 181 ~ 193



Mounting bracket CK-34Z
See website

ABS UL94V-0 Models

Product no. / Details

| Product no. | L | W | H | Number of poles | Weight (g) |
|-------------|----|-----|----|-----------------|------------|
| TMB- 4P | 91 | 55 | 43 | 4P | 102 |
| TMB- 6P | 91 | 75 | 43 | 6P | 134 |
| TMB-10P | 91 | 110 | 43 | 10P | 190 |

Polycarbonate UL94V-0 Models

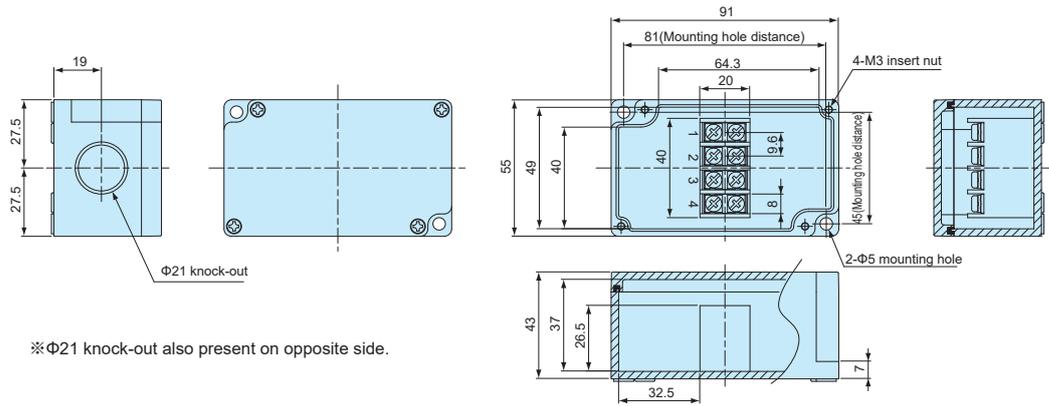
Product no. / Details

| Product no. | L | W | H | Number of poles | Weight (g) |
|-------------|-----|-----|----|-----------------|------------|
| TMB-15PCS | 185 | 100 | 70 | 15P | 412 |
| TMB-20PC | 160 | 160 | 70 | 10P×2 | 560 |
| TMB-20PCL | 230 | 100 | 70 | 20P | 484 |

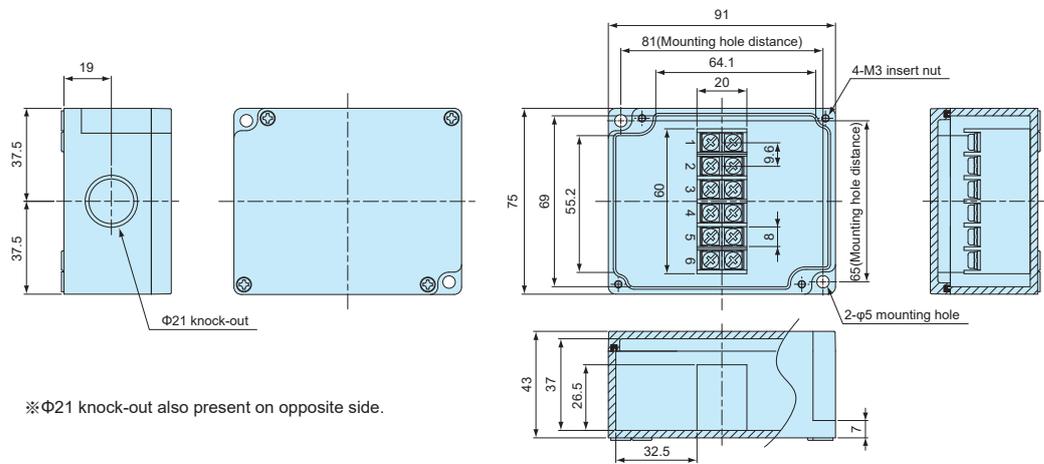
TMB dimensions

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

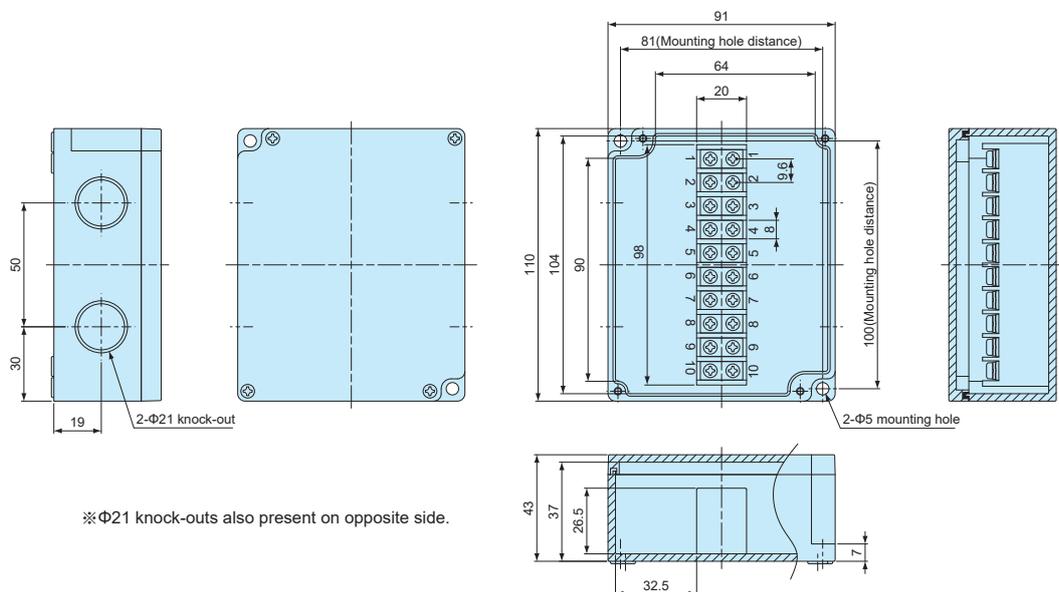
TMB-4P



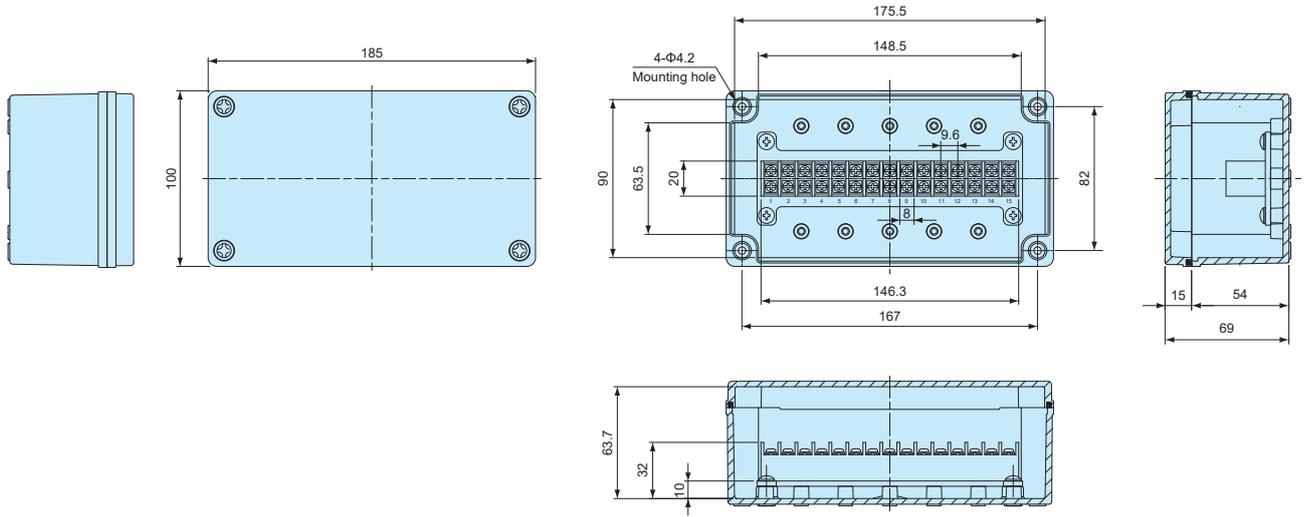
TMB-6P



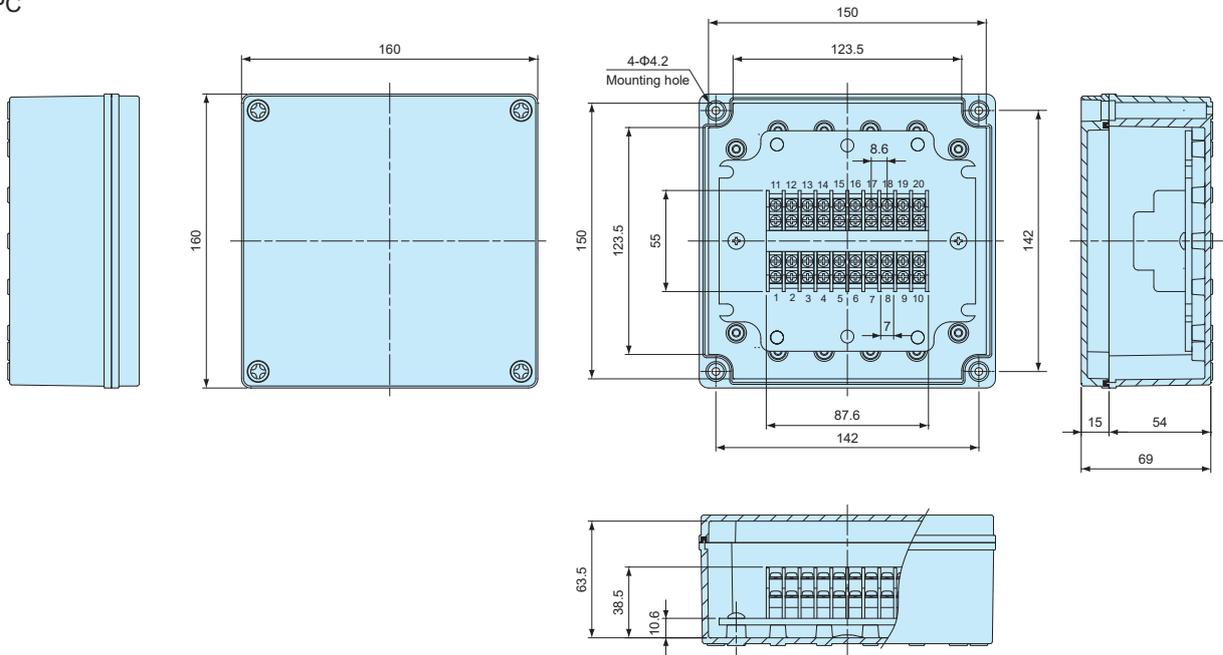
TMB-10P



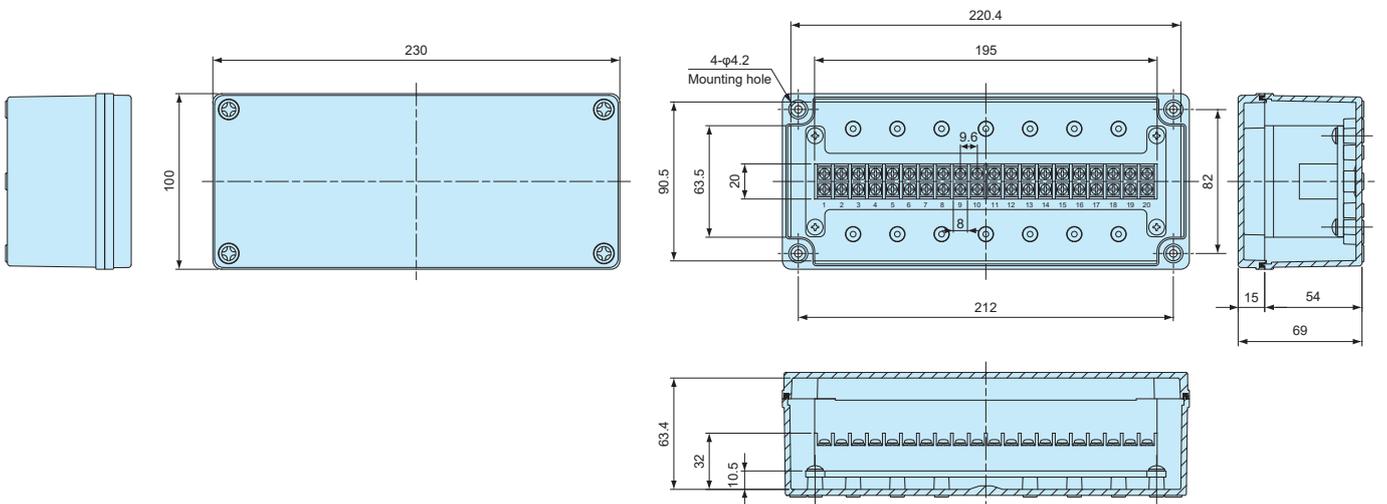
TMB-15PCS

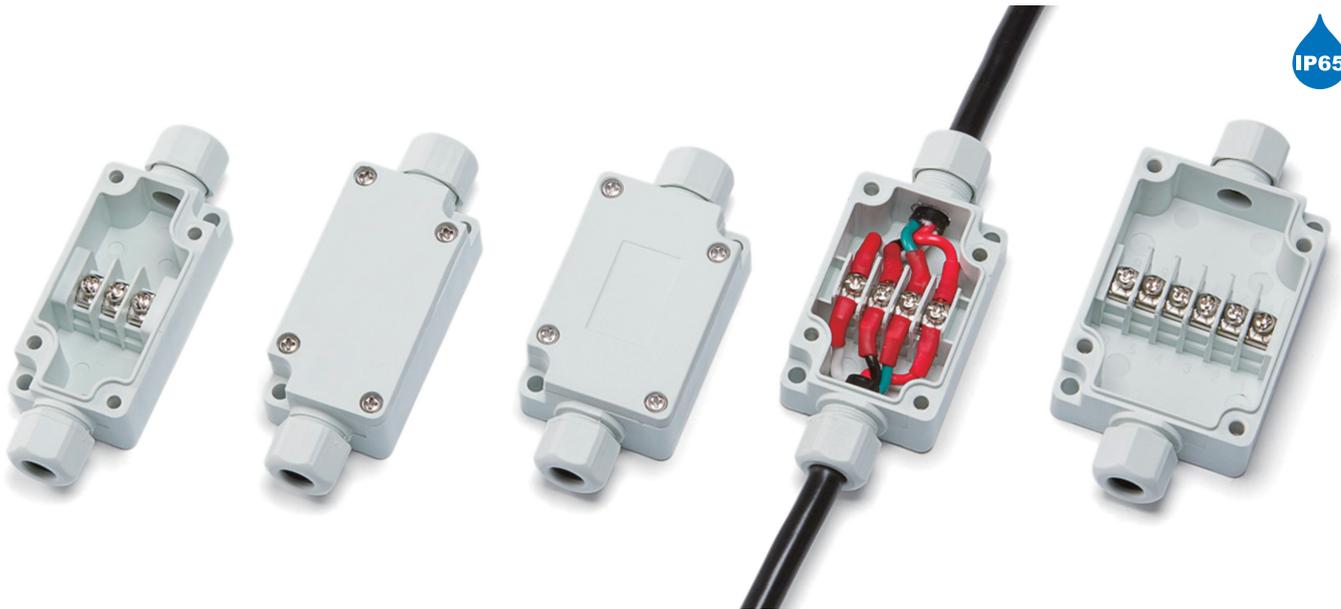


TMB-20PC



TMB-20PCL

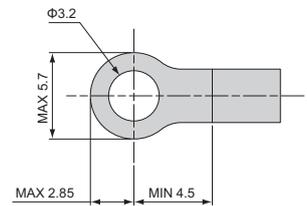
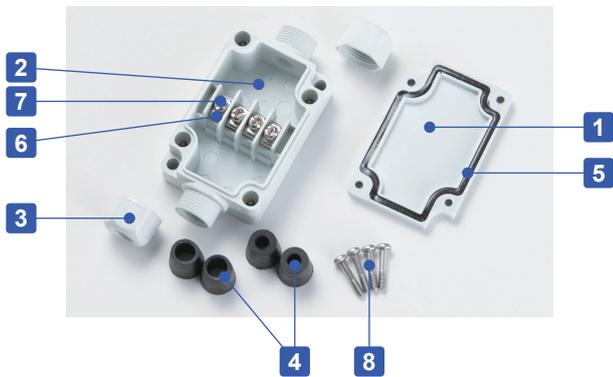




- Integrated junction box consisting of cable glands and a terminal block.
- Suitable for industrial facilities, power cable joints, relay between motors and/or sensors.
- IP65 protection class with high oil resistant PBT material.
- 3, 4, and 6 pole types are available.
- $\Phi 5.0$ and $\Phi 7.4$ rubber cable bushes (2 pcs each) are included.

| Technical Data |
|--|
| Protection class : IP65 |
| Operating temperature : $-20^{\circ}\text{C} \sim +75^{\circ}\text{C}$ |
| Recommended torque : $0.5\text{N} \cdot \text{m}$ |

Applicable crimp terminal
R1.25-3



Terminal Block Specification

| | |
|----------------------------|---------------------|
| Rated voltage | 250V |
| Rated current | 15A |
| Applicable wire | 1.25mm ² |
| Standard tightening torque | 0.5N · m |

Components

| No. | Part name | Pcs | Material | Color / Finish |
|-----|------------------|---------|--------------------|----------------|
| 1 | Cover | 1 | PBT UL94V-0 | Light gray |
| 2 | Base | 1 | PBT UL94V-0 | Light gray |
| 3 | Cable cap | 2 | PBT UL94V-0 | Light gray |
| 4 | Rubber bush | 2 pairs | EPDM | Black |
| 5 | Gasket | 1 | Polyurethane | Black |
| 6 | Conductive plate | 3~6 | Brass | Nickel plated |
| 7 | Terminal screw | 3~6 | Steel M3 | Nickel plated |
| 8 | Cover screw | 4 | Stainless steel M3 | Unfinished |

Accessories (Optional parts)



Shorting Bar SBR series
See website



Rubber Bush RB-9
See page 176

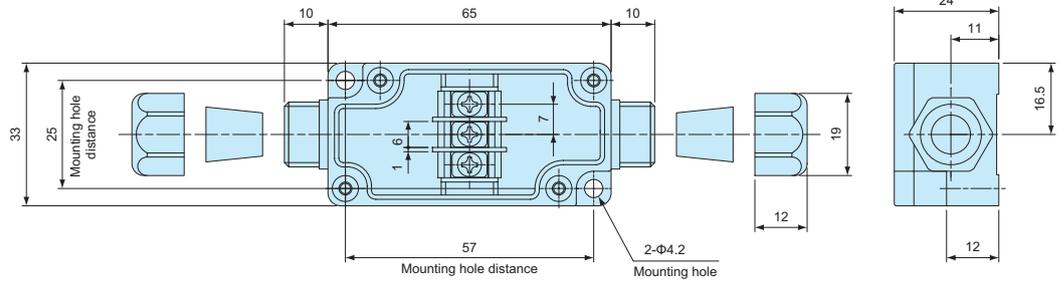
Product no. / Details

| Product no. | L | W | H | Number of poles | Weight (g) |
|--------------|----|----|----|-----------------|------------|
| ● Light gray | | | | | |
| TMC-3PG | 65 | 33 | 24 | 3P | 52 |
| TMC-4PG | 60 | 40 | 24 | 4P | 58 |
| TMC-6PG | 70 | 50 | 24 | 6P | 73 |

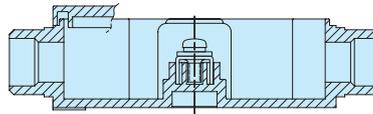
TMC dimensions

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

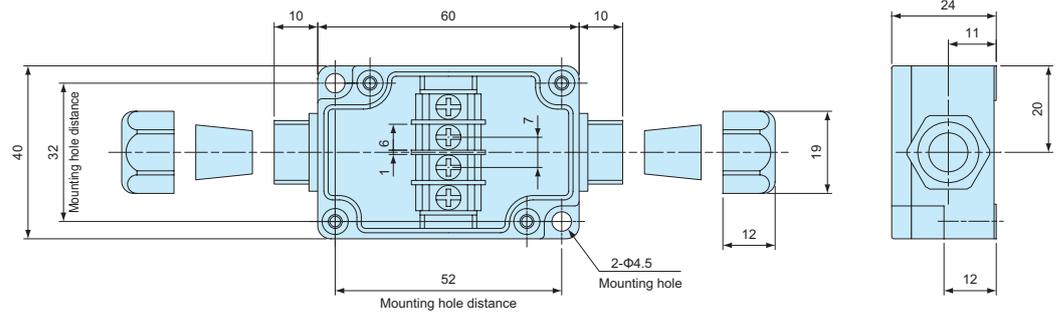
TMC-3PG



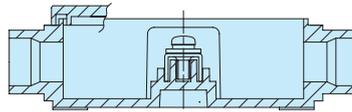
| Inner diameter of rubber bush | Cable range |
|-------------------------------|-------------|
| Φ5.0 | Φ4 ~ Φ5 |
| Φ7.4 | Φ6 ~ Φ7 |



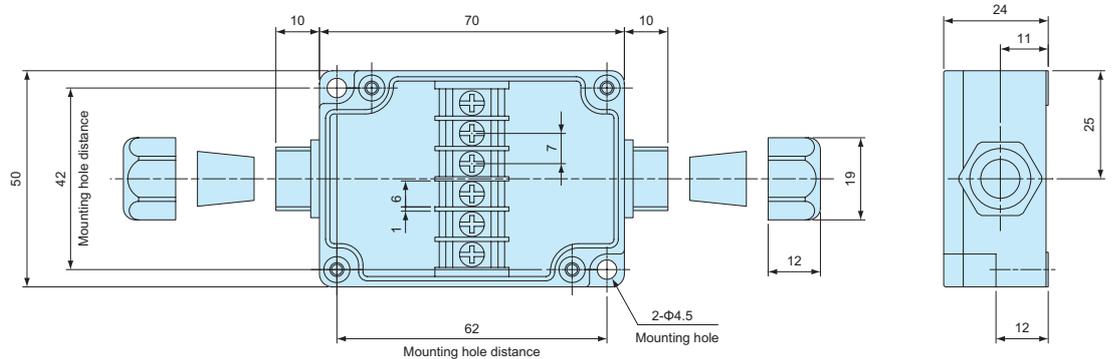
TMC-4PG



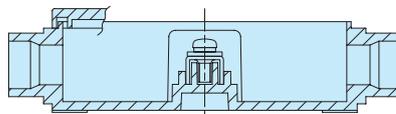
| Inner diameter of rubber bush | Cable range |
|-------------------------------|-------------|
| Φ5.0 | Φ4 ~ Φ5 |
| Φ7.4 | Φ6 ~ Φ7 |



TMC-6PG

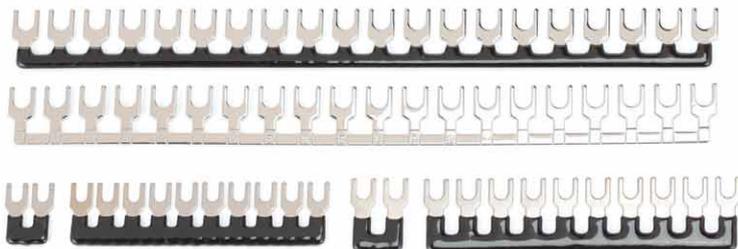


| Inner diameter of rubber bush | Cable range |
|-------------------------------|-------------|
| Φ5.0 | Φ4 ~ Φ5 |
| Φ7.4 | Φ6 ~ Φ7 |



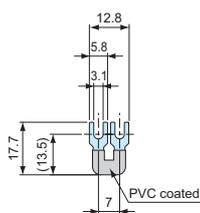
SBR SERIES

SHORTING BAR

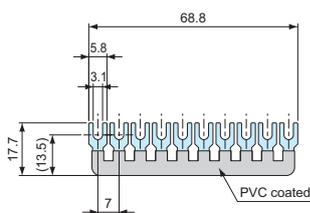


- Shorting bar for common-wiring.
- SBR70-10P, SBR85-10P, SBR95-20P, and SBR95-20N can be cut accordingly into required poles.
- PVC coated. SBR95-20 available in both PVC coated (SBR95-20P) and non PVC coated (SBR95-20N) models.
- See chart below for suitable box.

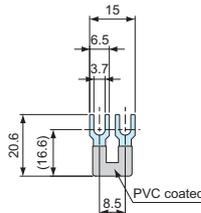
SBR70-2P



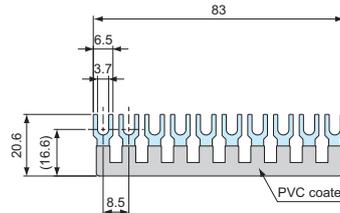
SBR70-10P



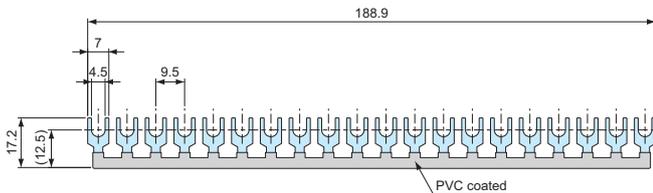
SBR85-2P



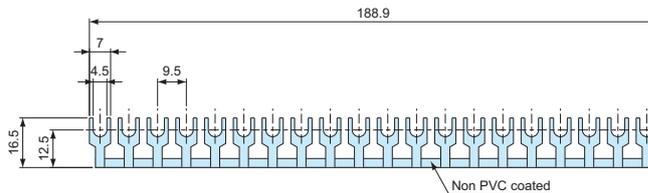
SBR85-10P



SBR95-20P



SBR95-20N



Suitable Box Chart

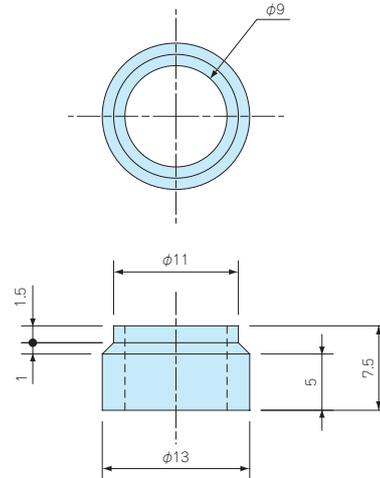
| Product no. | Number of poles | Pole distance | Suitable box |
|-------------|-----------------|---------------|--|
| SBR70 - 2P | 2P | 7.0mm | TMC series |
| SBR70 -10P | 10P | 7.0mm | TMC series |
| SBR85 - 2P | 2P | 8.6mm | TMB-20P, TMA-20P-AS, TMA30P-AS |
| SBR85 -10P | 10P | 8.6mm | TMB-20P, TMA-20P-AS,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

Product no. / Feature

■ Pack quantity differs by models.

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

RB-9 RUBBER BUSH



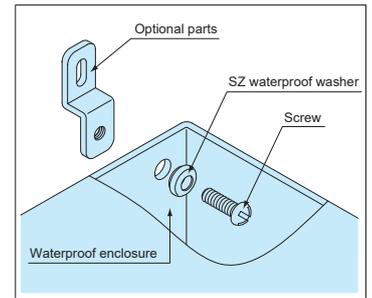
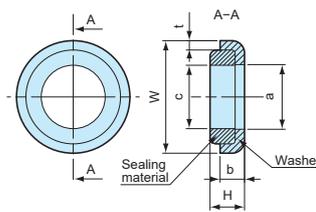
- Rubber bush for TMC series terminal junction box.
- Applicable for $\phi 8 \sim \phi 9$ mm diameter cable.

Product no. / Details

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

SZ series

WATERPROOF WASHER



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

| Technical Data |
|---|
| Water pressure resistance : M3 ~ M16 0.98MPa (10kgf/cm ²) / 1hour |

- 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 |

WPMB-M4-3 series

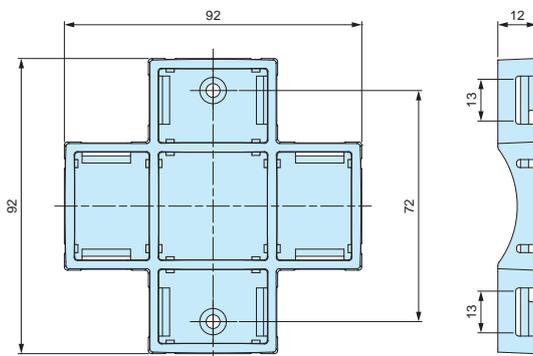
POLE MOUNTING BRACKET



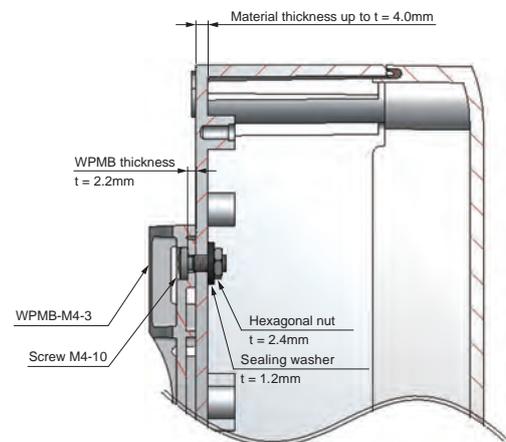
- Pole mount bracket made from weather resistant ASA material.
- Suitable for both vertical and horizontal mounting.
- IPX7 protection can be maintained through the use of sealing washers.
- Hole milling is required for bracket installation.
- Pole mount is possible with the use of PKB series mounting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

PKB series

POLE MOUNTING BELT



PKB-10PM, 10P



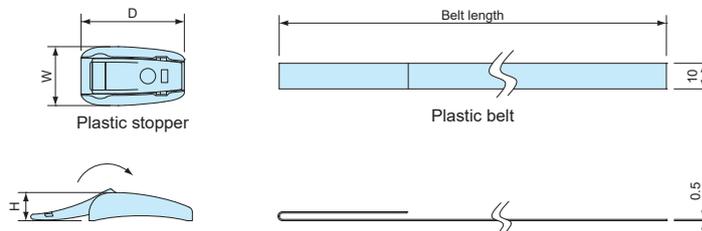
PKB-10S, 20S

- 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.

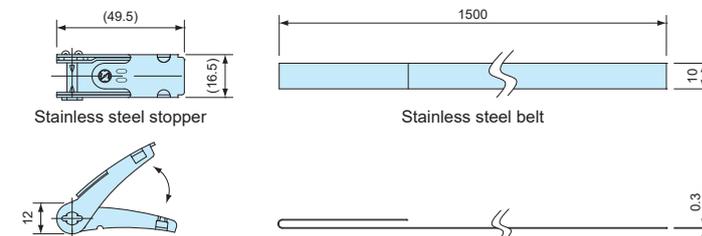
PKB dimensions

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

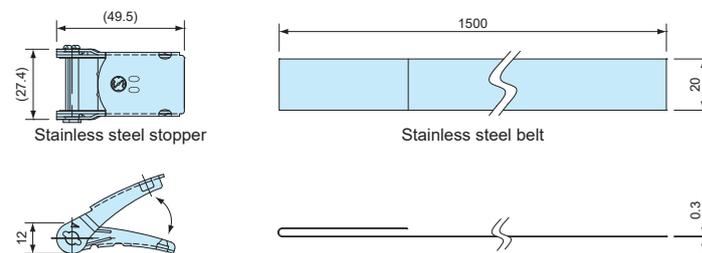
PKB-10PM, 10P



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 |

NMG series

NEODYMIUM MAGNET

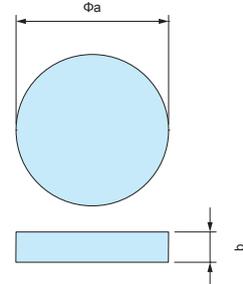
Round magnet

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



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

NMG dimensions

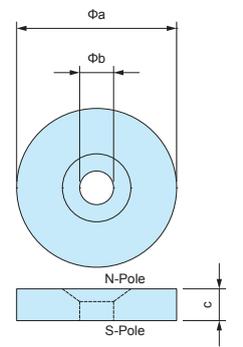


Product no. / Details

| 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 |

Round magnet with countersunk hole

- Please fasten with a screw.

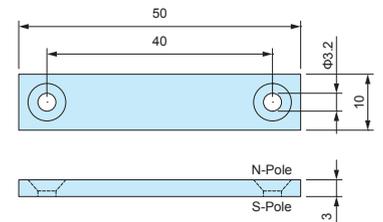


Product no. / Details

| 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

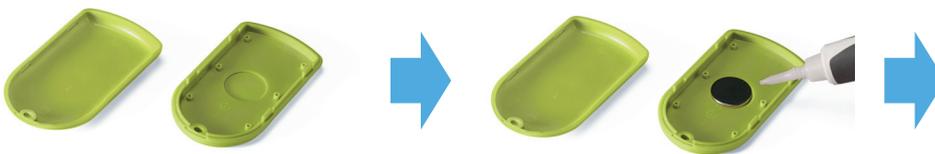
- Please fasten with a screw.



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.

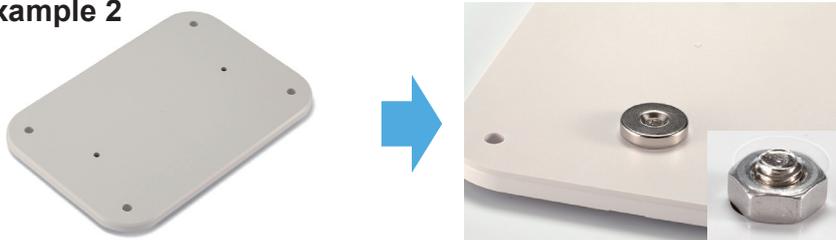


Make recessed pocket on the inside wall.

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.

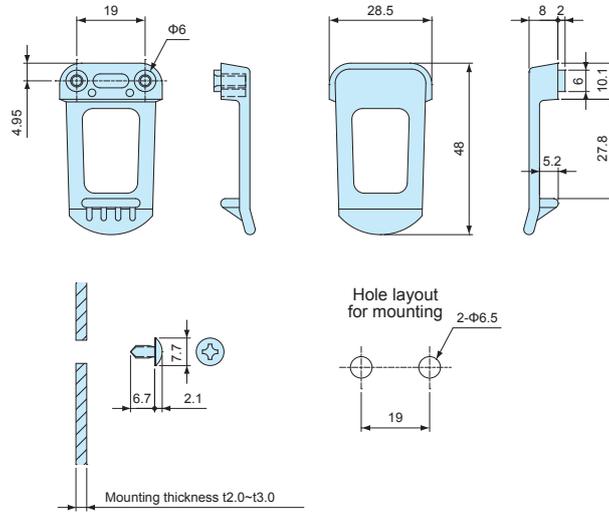
GDH series

PLASTIC BELT CLIP



GDH dimensions

DXF/DWG/PDF drawings available on our website.



Components

| No. | Part name | Pcs | Material | Color / Finish |
|-----|-----------|-----|--------------|----------------|
| 1 | Clip | 1 | ABS UL94HB | White • Black |
| 2 | Screw | 2 | Steel M3.5-6 | Zinc plated |

Installation example

Product no. / Details

| Product no. | | W | H | D |
|-------------|---------|------|----|----|
| ● White | ● Black | | | |
| GDH-1W | GDH-1B | 28.5 | 10 | 48 |

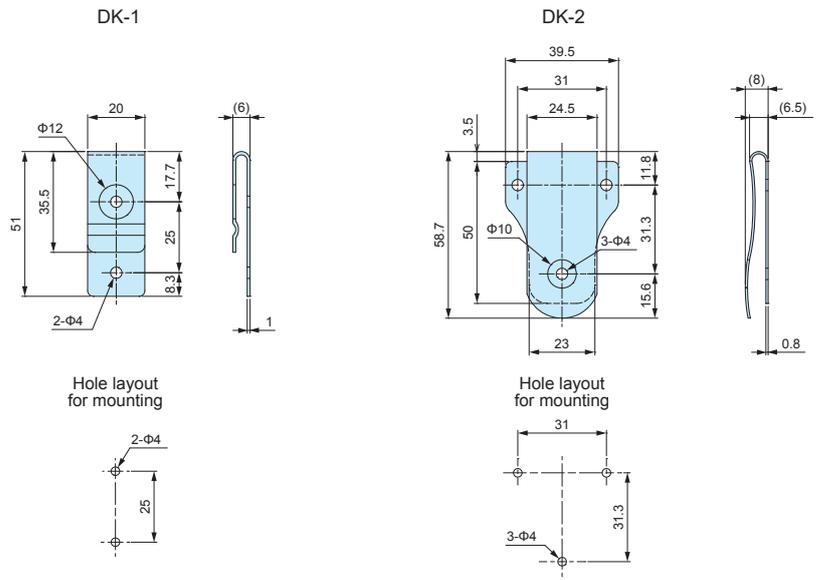
DK series

STEEL BELT CLIP



DK dimensions

DXF/DWG/PDF drawings available on our website.

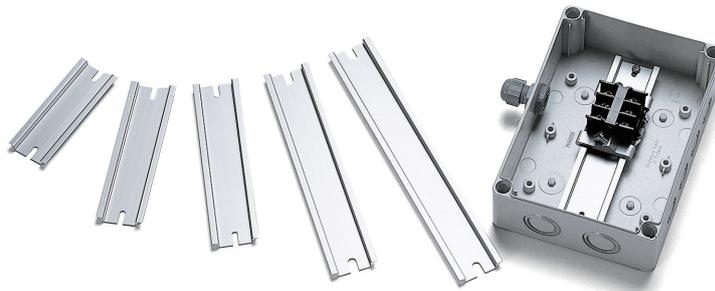


Product no. / Details

| Product no. | Material | Finish |
|-------------|------------------|---------------|
| DK-1 | Steel SPCC t=1.0 | Chrome plated |
| DK-2 | Steel SPCC t=0.8 | Chrome plated |

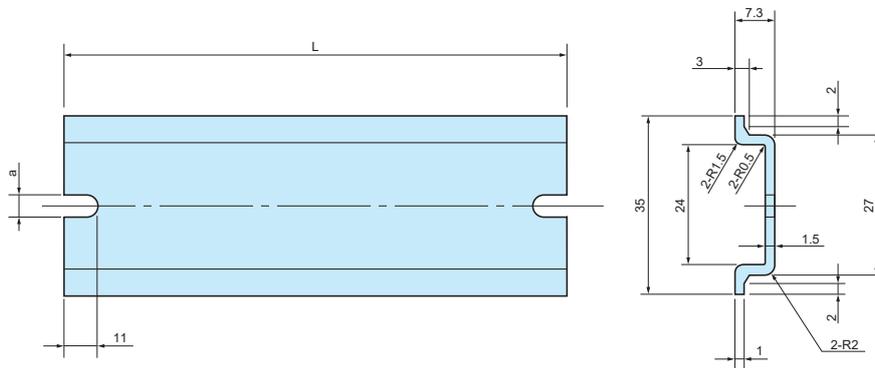
FDR series

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.

Matching DIN-Rail Chart

BC□□ series

| Product no. | Matching DIN-Rail |
|-------------|-------------------|
| 091207 | FDR - 80 |
| 091208 | 80 |
| 101507 | 110 |
| 101508 | 110 |
| 112107 | 170 |
| 112110 | 170 |
| 112607 | 223 |
| 112610 | 223 |
| BCAP | |
| BCPC | |
| BCPK | |
| BCAR | |
| BCPR | |
| 131508 | 120 |
| 131808 | 150 |
| 131810 | 150 |
| 151509 | 120 |
| 151512 | 120 |
| 162110 | 170 |
| 162113 | 170 |
| 162610 | 223 |
| 162613 | 223 |
| 172211 | 170 |
| 172711 | 223 |

BDN series

| Product no. | Matching DIN-Rail |
|-------------|-------------------|
| 6- 8- 5 | FDR - 50 |
| 7-10- 4 | - |
| 9- 9- 6 | FDR - 80 |
| 9-13- 5 | 120 |
| 10-14- 7 | 128 |
| 11-16- 6 | 150 |
| 12-22- 8 | 205 |
| 16-26- 9 | 242 |

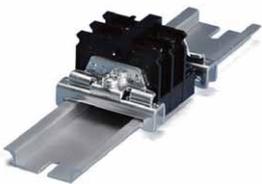
BCAS series

| Product no. | Matching DIN-Rail |
|-------------|-------------------|
| 071005 | FDR - 92 |
| 080806 | 66 |
| 081104 | 92 |
| 081107 | 92 |
| 081108 | 92 |
| 081110 | 92 |
| 081307 | 110 |
| 081308 | 110 |
| 081807 | 168 |
| 081808 | 168 |
| 082507 | 235 |
| 082508 | 235 |
| 101007 | 77 |
| 101010 | 77 |
| 101807 | 150 |
| 102007 | 170 |
| 102307 | 202 |
| 121207 | 80 |
| 121210 | 80 |
| 141709 | 146 |
| 142309 | 205 |
| 151507 | 120 |
| 151510 | 120 |
| 152004 | 170 |
| 152007 | 170 |
| 152010 | 170 |
| 152013 | 170 |
| 152016 | 170 |
| 152510 | 226 |
| 152513 | 226 |
| 161607 | 137 |

SPCM • SPCP series

| Product no. | Matching DIN-Rail |
|-------------|-------------------|
| 081304 | FDR - 50/100 |
| 081305 | 50/100 |
| 081306 | 50/100 |
| 081308 | 50/100 |
| 081310 | 50/100 |
| 081313 | 50/100 |
| 101004 | 80 |
| 101006 | 80 |
| 131304 | 100 |
| 131305 | 100 |
| 131306 | 100 |
| 131308 | 100 |
| 131310 | 100 |
| 131313 | 100 |
| SPCM | |
| SPCP | |
| 131804 | 100/150 |
| 131805 | 100/150 |
| 131806 | 100/150 |
| 131808 | 100/150 |
| 131810 | 100/150 |
| 131813 | 100/150 |
| 131815 | 100/150 |
| 181808 | 150 |
| 181810 | 150 |
| 181813 | 150 |
| 181815 | 150 |
| 182508 | 150/223 |
| 182510 | 150/223 |
| 182515 | 150/223 |

Accessories (Optional parts)



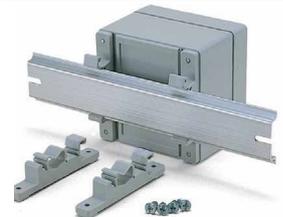
DIN-Rail stopper bracket TKR series
See page DIN-ACC-2



DIN-Rail mounting base DRA series
See page DIN-ACC-1



DIN-Rail mounting base DRT series
See page DIN-ACC-1



DIN-Rail mounting feet CKD series
See page DIN-ACC-2

DRP series

DIN RAIL MOUNTING BASE

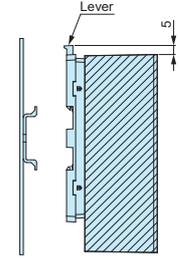


Installation Example



NOTE

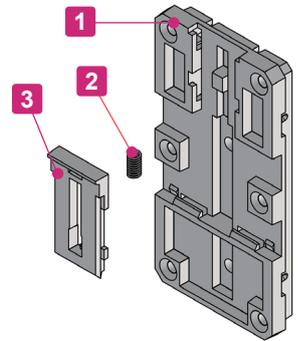
Before installation, please ensure that the lever is not fully hidden behind the enclosure.



Technical Data

Max load : 5kg

- Mounting base for installation of enclosures, PCB and other parts onto 35mm DIN Rail.
- 4 new sizes added for a total of 5 different sizes available for selection.
- Easy mounting and dismounting from a DIN Rail using the pull lever.
- Replacement product for the discontinued DRA series.



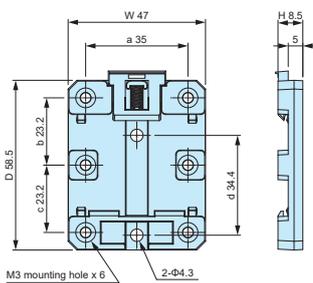
Components

| No. | Part name | Pcs | Materials | Color / Finish |
|-----|--------------------|-----|------------------|----------------|
| 1 | Base | 1 | PC/ABS (UL94V-0) | Off-white |
| 2 | Compression spring | 1 | SUS304 | Unfinished |
| 3 | Lever | 1 | PC/ABS (UL94V-0) | Off-white |

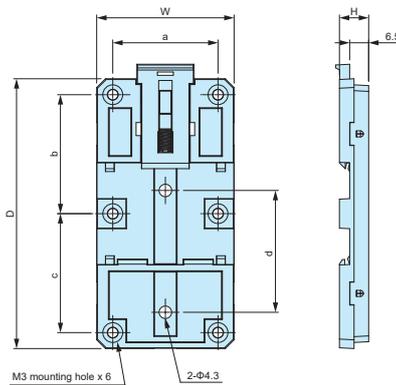
DRP dimensions

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

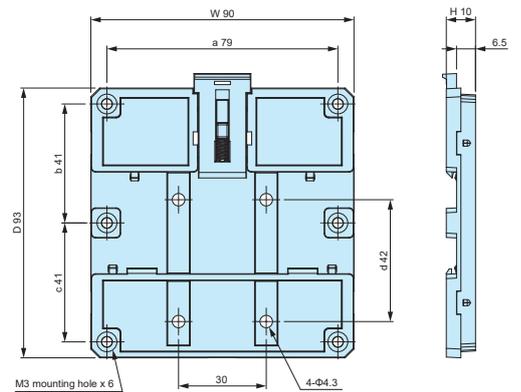
DRP5-6W



DRP4-9W, DRP5-9W, DRP7-9W



DRP9-9W



Product no. / Details

| Product no. | Dimensions | | | | | | | Weight (g) | Old product model |
|--------------------|------------|-----|------|----|------|------|------|------------|-------------------|
| | W | H | D | a | b | c | d | | |
| NEW DRP4-9W | 38 | 10 | 93 | 27 | 41 | 41 | 41 | 20.6 | DRA-2 |
| NEW DRP5-6W | 47 | 8.5 | 58.5 | 35 | 23.2 | 23.2 | 34.4 | 13.4 | DRA-3 |
| DRP5-9W | 47 | 10 | 93 | 36 | 41 | 41 | 42 | 24.6 | DRA-1 |
| NEW DRP7-9W | 65 | 10 | 93 | 54 | 41 | 41 | 42 | 31.3 | - |
| NEW DRP9-9W | 90 | 10 | 93 | 79 | 41 | 41 | 42 | 41.6 | - |



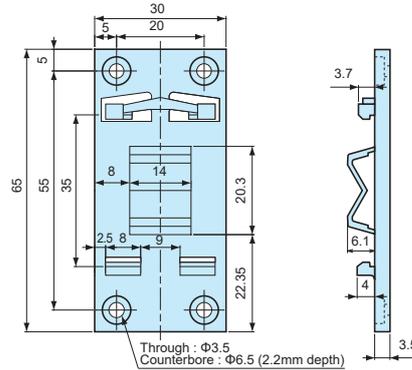
DRT series

DIN RAIL MOUNTING BASE

Installation example

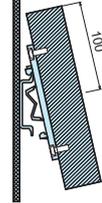


■ DXF/DWG/PDF/STP drawings available on our website.



■ **NOTE**

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



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

Technical Data

Max load : 1kg

Product no. / Details

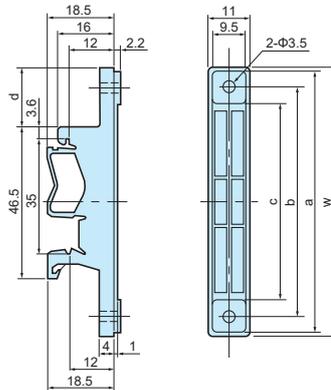
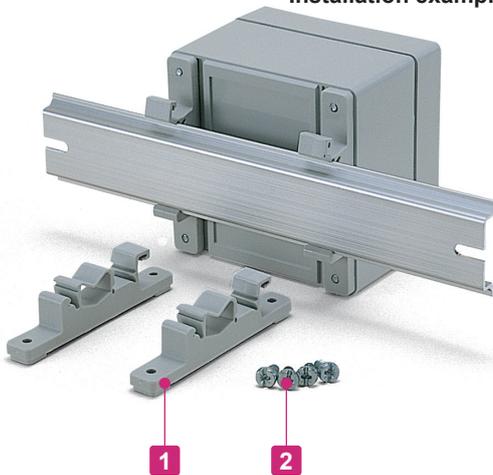
| Product no. | Material | Color | Weight (g) | Pack of |
|-------------|----------------|------------|------------|---------|
| DRT-1 | PC/ABS UL94V-0 | Light gray | 7.3 | 1 |
| DRT-1-P | PC/ABS UL94V-0 | Light gray | 7.3 (1pc) | 50 |

CKD series

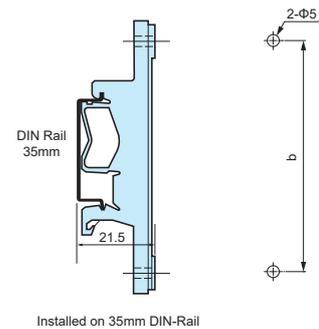
DIN RAIL MOUNTING FEET

Installation example

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



Hole layout for mounting



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

Technical Data

Max load : 3kg / 2pcs

Components

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

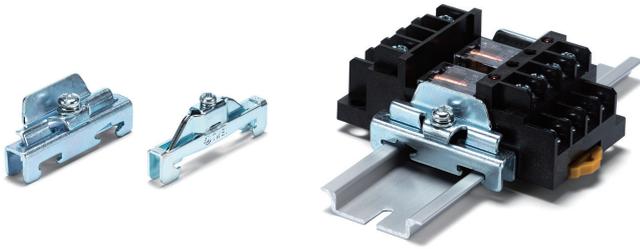
Product no. / Details

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

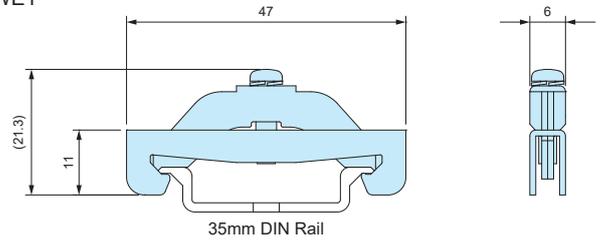
TKR series

DIN RAIL TERMINAL BLOCK END STOPPER

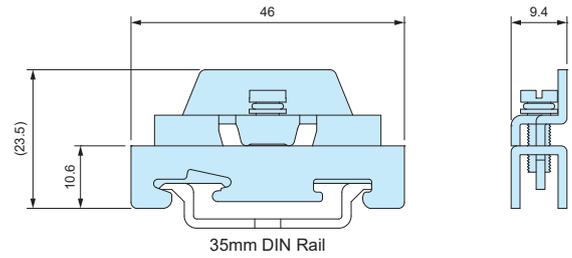
■ DXF/DWG/PDF drawings available on our website.



TKR-TWE1



TKR35-1



- Stopper bracket for use with 35mm DIN Rail to keep an attachment at a fixed location.
- TKR-TWE1 is used with small DIN Rail attachment parts. For larger / higher attachment parts, TKR35-1 is recommended for providing additional support.

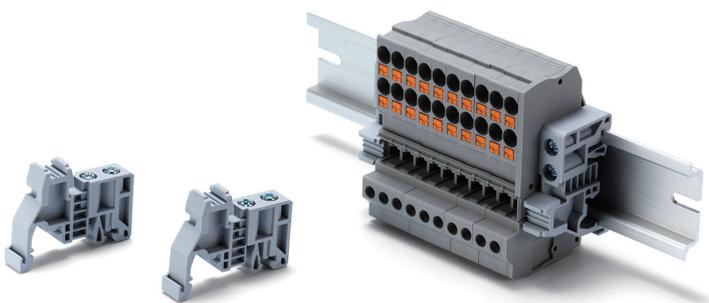
Product no. / Details

| Product no. | Material | Finish | Pack of |
|-------------|----------|--------------------|---------|
| TKR-TWE1 | Steel | Trivalent chromate | 2 |
| TKR35-1 | Steel | Trivalent chromate | 2 |
| TKR35-1-P | Steel | Trivalent chromate | 50 |

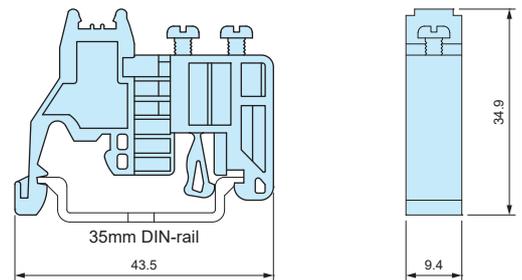
DRS series

ECONOMICAL DIN RAIL END STOPPER

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



DRS35-2



- Economically priced end stopper bracket.
- Included screws allow affixing of stopper brackets firmly at a fixed location.

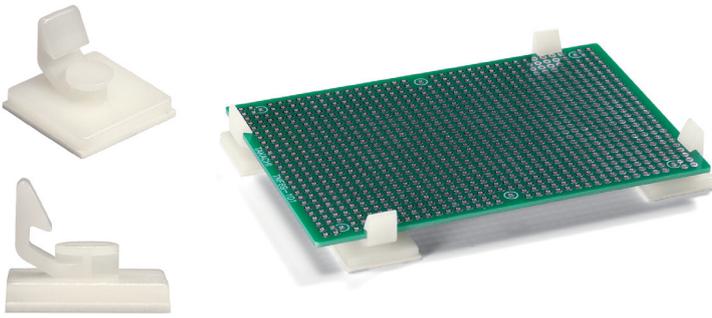
Product no. / Details

| Product no. | Material | Color | Pack of |
|-------------|----------|------------|---------|
| DRS35-2 | PA66 | Light Gray | 2 |
| DRS35-2-P | PA66 | Light Gray | 50 |

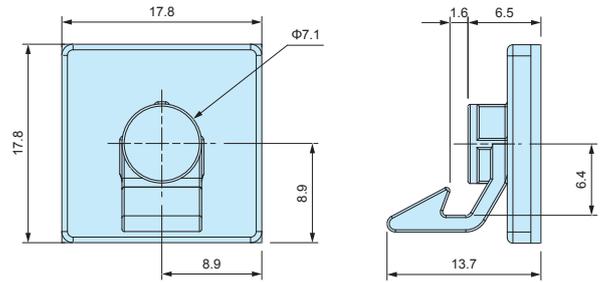
ULCK series

SCREWLESS PCB ADHESIVE STANDOFF

Application example



ULCK dimensions



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

- Securing of a 1.6mm thick PCB made easy by simply snapping it in.
- Adhesive standoff can be freely and easily affixed on.
- Once removed, it cannot be adhered on again.

Product no. / Details

■ Material / Color : PA66 UL94V-2 / Natural

| Product no. | Weight (g) | Pack of |
|-------------|------------|---------|
| ULCK-6.4 | 1.3 (1 pc) | 4 |

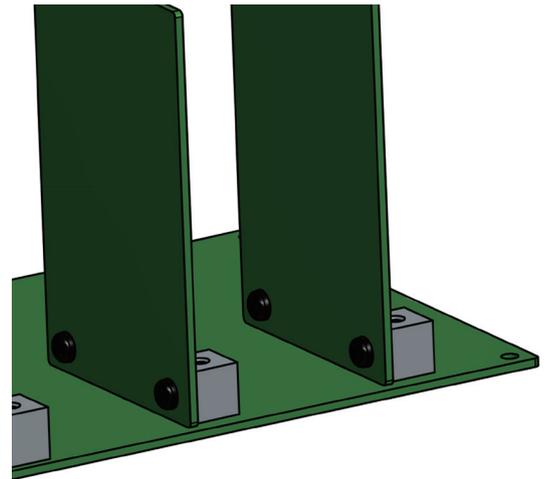
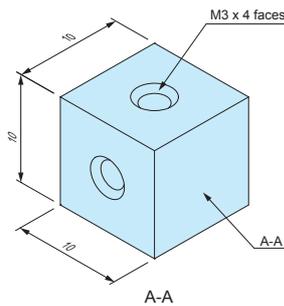
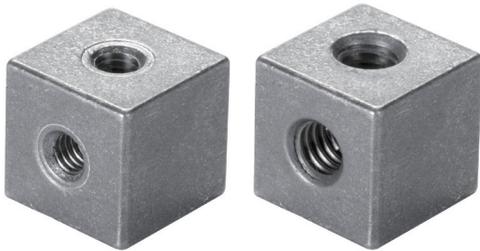
CUBE series

CUBE STANDOFF

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

CUBE10-M3

CUBE10-M4



- 10mm threaded cube shape standoff with a thread on 4 faces.
- M3 and M4 thread models available.
- Conveniently usable when installing PCB or metal plate upright.
- CUBE can also be used to make a simple housing by vertically aligning the plates.

Product no. / Details

■ Zinc diecast : Glossy barrel finish

| Product no. | Pack of |
|-------------|---------|
| CUBE10-M3 | 2 |
| CUBE10-M4 | 2 |
| CUBE10-M3-P | 20 |
| CUBE10-M4-P | 20 |

AST series

INSERT NUT ADHESIVE STANDOFF

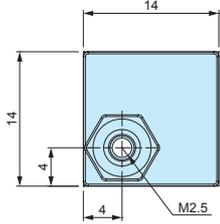


- Double-sided adhesive tape allows the standoff to be mounted quickly and easily; allows PCB mounting in non-boss enclosures.
- Convenient for installing PCBs into enclosures without the need for customization.
- Please ensure that surface is cleaned and grease-free before adhering.
- Once removed, it cannot be adhered on again.

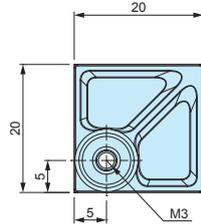
AST dimensions

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

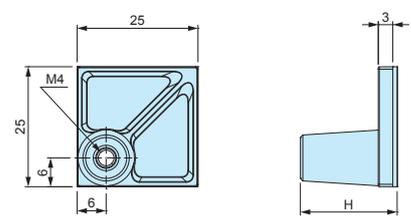
AST2.5-□



AST3-□



AST4-□



Product no. / Details

Bulk package

| Product no | H dimension | Included screw | Recommended PCB thickness (mm) | Recommended torque (N • m) | Weight (g) | Pack of | Product no | Pack of |
|------------|-------------|-----------------|--------------------------------|----------------------------|---------------|---------|--------------|---------|
| AST2.5-5B | 5 | M2.5-5 pan head | 1.0 ~ 2.0 | 0.3 | 0.6 (1 piece) | 4 | AST2.5-5B-P | 100 |
| AST2.5-10B | 10 | M2.5-5 pan head | 1.0 ~ 2.0 | 0.3 | 0.8 (1 piece) | 4 | AST2.5-10B-P | 100 |
| AST3-6B | 6 | M3-6 pan head | 1.0 ~ 3.0 | 0.4 | 1.5 (1 piece) | 4 | AST3-6B-P | 100 |
| AST3-10B | 10 | M3-6 pan head | 1.0 ~ 3.0 | 0.4 | 1.6 (1 piece) | 4 | AST3-10B-P | 100 |
| AST3-15B | 15 | M3-6 pan head | 1.0 ~ 3.0 | 0.4 | 1.8 (1 piece) | 4 | AST3-15B-P | 100 |
| AST3-20B | 20 | M3-6 pan head | 1.0 ~ 3.0 | 0.4 | 2.1 (1 piece) | 4 | AST3-20B-P | 100 |
| AST4-10.5B | 10.5 | M4-8 pan head | 1.0 ~ 3.5 | 0.8 | 2.6 (1 piece) | 4 | AST4-10.5B-P | 50 |
| AST4-20B | 20 | M4-8 pan head | 1.0 ~ 3.5 | 0.8 | 3.2 (1 piece) | 4 | AST4-20B-P | 50 |

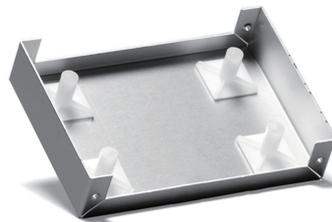
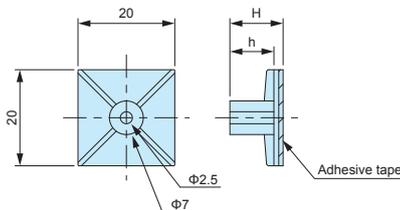
- Base material / color : Nylon 66 (UL94V-2) / Black
- Nut • screw material / finish : Steel / Trivalent chromate

- Bulk packaging is available. See "Bulk package" column above.
- Screws are not included for bulk packages.

ASR series

ADHESIVE PCB STANDOFF

ASR dimensions



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

■ Material / Color: Nylon 66 (UL94V-2) / Natural

| Technical Data |
|-------------------------------|
| Recommended torque : 0.4N • m |

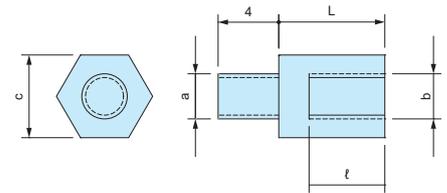
- M3 tapping screw use adhesive standoff. Recommended to be used with EM-3 or EM-3-6 self-tapping screws (See page 398).
- Please ensure that surface is cleaned and grease-free before adhering.
- Once removed, it cannot be adhered on again.

Product no. / Details

| Product no | H | h | Weight (g) | Pack of |
|------------|------|------|---------------|---------|
| ASR- 5 | 5.1 | 3.1 | 0.9 (1 piece) | 10 |
| ASR- 6 | 6.4 | 4.4 | 1.0 (1 piece) | 10 |
| ASR- 7 | 7.2 | 5.1 | 0.9 (1 piece) | 10 |
| ASR- 8 | 8.1 | 6.3 | 0.9 (1 piece) | 10 |
| ASR- 9 | 9 | 7 | 1.0 (1 piece) | 10 |
| ASR-11 | 11 | 9 | 1.0 (1 piece) | 10 |
| ASR-13 | 12.7 | 10.7 | 1.2 (1 piece) | 10 |
| ASR-14.5 | 14.7 | 12.8 | 1.1 (1 piece) | 10 |
| ASR-16 | 15.9 | 13.9 | 1.3 (1 piece) | 10 |
| ASR-19 | 19.1 | 17.1 | 1.4 (1 piece) | 10 |

TPS series

TAPPING STANDOFF



- Tapping screw head allows for easy installation onto existing enclosure boss mount.
- 4 different sizes available : M2.3, M2.6, M3 and M4 size.

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

■ Material / Finish : Brass / Unfinished

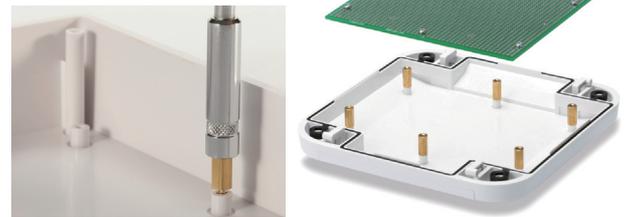
Product no. / Details

| 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 | | |
| TPS-M2.6-4 | 2.6 | M2.6 | 5 | 4 | 3 | 0.7 | 4 | | PF • PFF series (M2.6 boss models) WP series (M2.6 boss models) |
| 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 | | |
| 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 | SU • OP TWS • TW • TWN • TWF series (M3 boss models) | |
| 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 | | |
| 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 | BCAS • BCAP • BCPC • BCPK series (M4 boss models) BCAR • BCPR series (M4 boss models) SPCP • SPCM • WG • WGV • WGPC | |
| 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

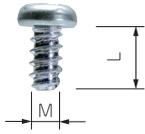
| Product no. | M | L | Material | Finish | Pack of |
|--------------------|-----|---|----------|--------------------|---------|
| MT2.3-4 | 2.3 | 4 | Steel | Trivalent chromate | 20 |
| MT2.3-6 | 2.3 | 6 | Steel | Trivalent chromate | 20 |
| MT2.6-4 | 2.6 | 4 | Steel | Trivalent chromate | 20 |
| NEW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



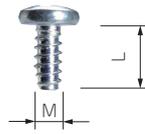
EM series

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

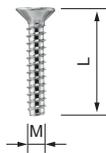
| Product no. | M | L | Head type | Suitable models | Pack of |
|------------------|-----|---|-----------|--|---------|
| EM-1.6 | 1.6 | 4 | Pan | SMW • CSS • CS SIC • SIM • WC • PS (M1.6 boss models) | 50 |
| EM-2 | 2 | 5 | Pan | PS • TW • TWN • TWF SIC • SIM • PF • WC • WP (M2 boss models) | 50 |
| 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

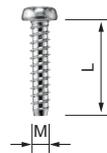
TORX SCREW



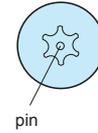
Flat head



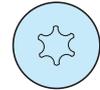
Pan head



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 |
| MR2.6-14PS | 2.6 | 14 | T8 | Pan | 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 |
| MR2.6-14S | 2.6 | 14 | 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 |
| MR2.6-18S | 2.6 | 18 | T8 | 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-1S | 3 | 5 | T10 | Flat | Steel | Nickel plated | UC | 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 |

PMF-6B

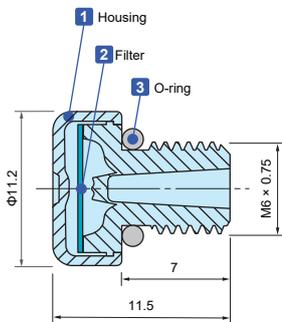
SMALL PROTECTIVE VENT



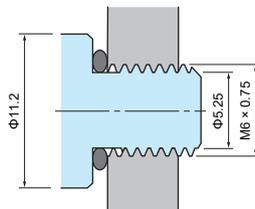
Application example

- 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.

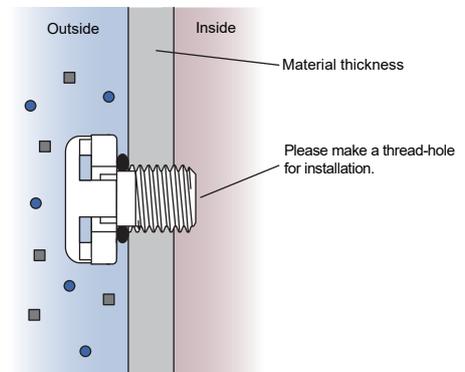
PMF-6B dimensions



Hole milling drawings



Installation drawings



Technical Data

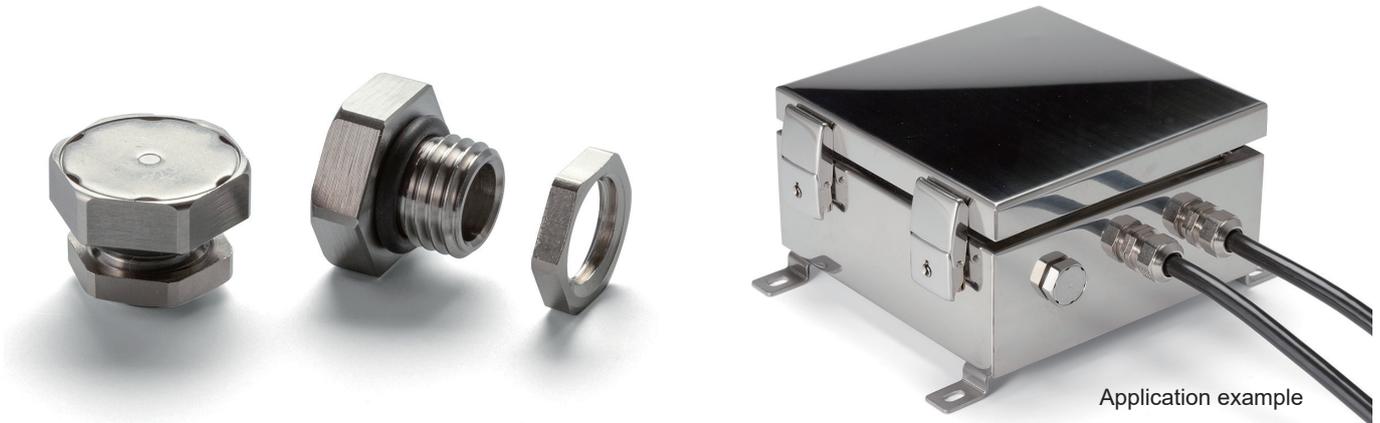
| | |
|---------------------------|---|
| Airflow | 300ml / min (dp = 7 kPa) |
| Recommended Torque | 0.2 ~ 0.4 N · m |
| Certifications | IEC60529 (Protection class test) : IP66 • IP67 • IP68 IEC60068-2-1, 2, 14 (Heat resistance test) : -40°C ~ +150°C IEC60068-2-78 (Humidity test) : 85°C • 85% humidity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

Product no. / 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-12M

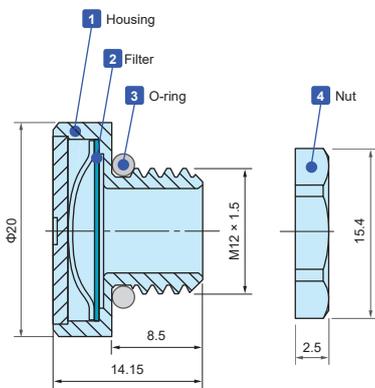
STAINLESS STEEL PROTECTIVE VENT



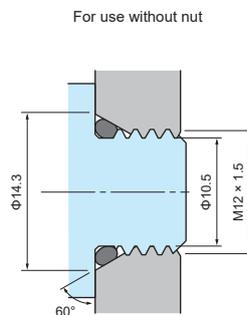
Application example

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

PMF-12M dimensions

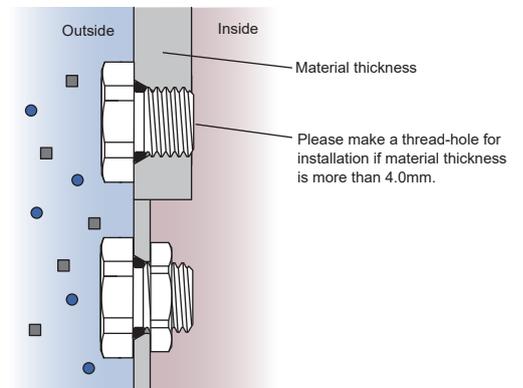


Hole milling drawings



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

Installation drawings



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

Technical Data

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

Product no. / Details

| Product no. | Material | | | | G | | Nut SW |
|-------------|-----------------|----------|----------|-----------------------|-------------|-------------|--------|
| | 1 Housing | 2 Filter | 3 O-ring | 4 Nut | Thread size | Mount hole | |
| PMF-12M | Stainless steel | PTFE | Silicone | Brass · Nickel plated | M12 x 1.5 | $\Phi 12.2$ | 15 |

PMF series

PROTECTIVE VENT

Pressure Equalization / Ventilation

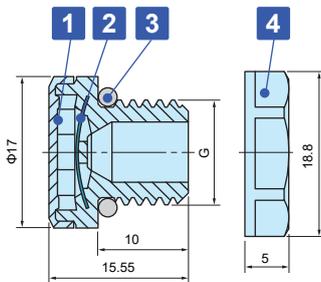


Application Example

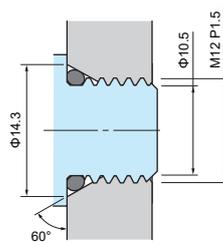
- Protective vent protects the enclosure from deformation by equalizing internal and external pressure differences, as well as venting the gas generated within the enclosure.
- IP68 protection class (water depth 2 meters / 60 mins) with an operating temperature range -40°C ~ +125°C allows them to be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

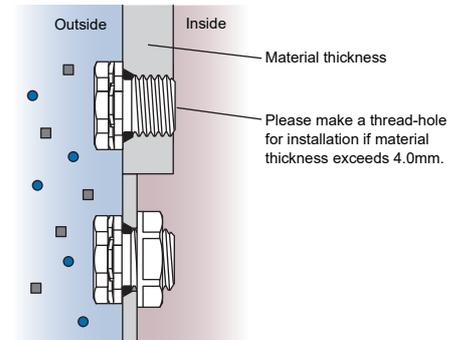


Hole milling drawings



■ 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) UL94V-0 (Flame-resistant) · UL746C f1 | |

Product no. / Details

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

PMF-32S

LARGE PROTECTIVE VENT

Pressure Equalization / Ventilation



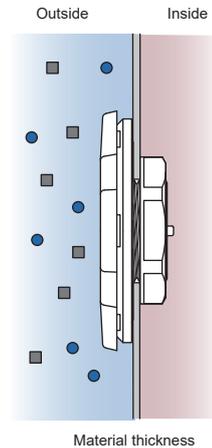
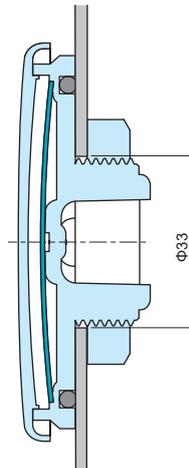
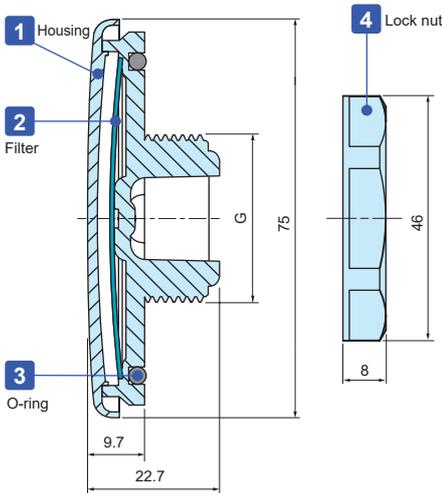
- Maintains exceptionally high airflow in extra-large enclosures with volumes of up to 200 liters in an outdoor environment.
- Protective vent protects the enclosure from deformation by equalizing internal and external pressure differences, as well as venting the gas generated within the enclosure.
-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

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

PMF-32 dimensions

Hole milling drawings

Installation drawings



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

Technical Data

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

Product no. / Details

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

VE8 series

ADHESIVE PROTECTIVE VENT FILTER



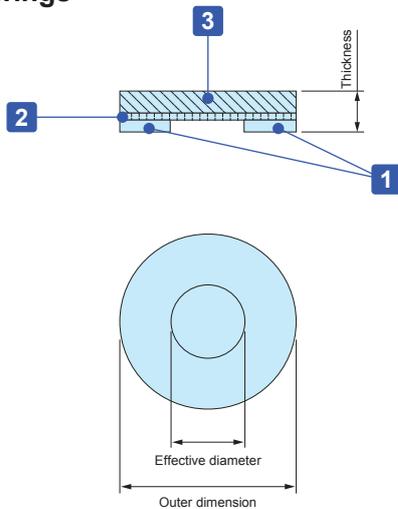
| Technical Data |
|--|
| Protection class : Dustproof IP6X Waterproof IPX4, IPX7 |
| Airflow : 3,300ml/min/cm2 (at 7Kpa) |
| Operating temperature : -40°C ~ +100°C |

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

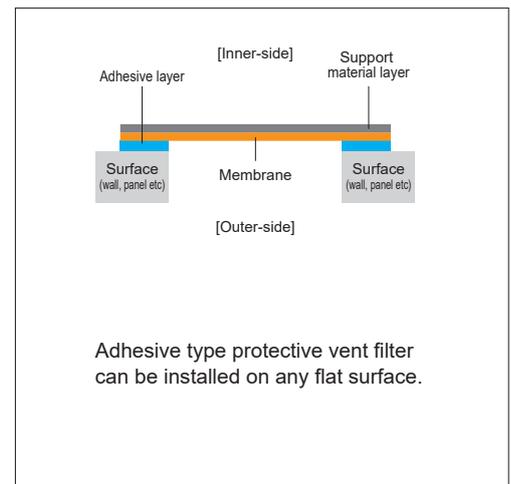
CAUTION

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

VE8 drawings



Installation drawings



Components

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

Product no. / Details

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

VSC SERIES

ADHESIVE PROTECTIVE VENT FILTER



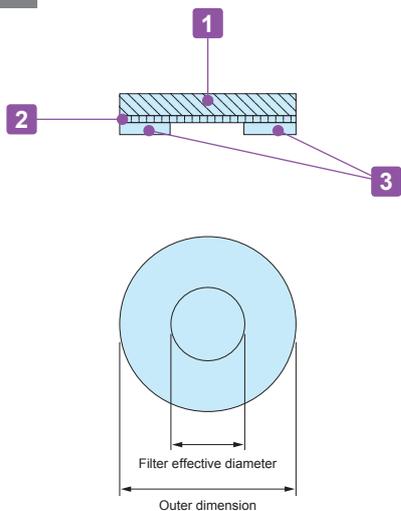
| Technical Data |
|--|
| Water Entry Pressure (WEP): $\geq 20.0\text{kPa}$ |
| Airflow: $450\text{cc}/\text{cm}^2 \cdot \text{min}$ at 1.29Kpa |

- Prevents ingress of a variety of contaminants, such as water, dust and other particles.
- Allows water vapor molecules to diffuse through the microporous membrane.
- Recommended to be adhered onto flat plastic or metallic surfaces.

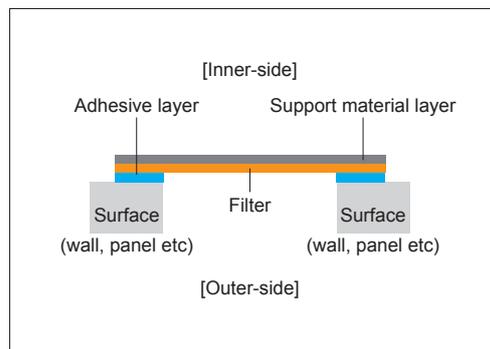
NOTE

- Surface must be wiped dry before adhering.
- An initial period of a few hours is required for the adhesive to properly bond to the surface.
- Please do not adhere onto the top-side of enclosures. Rain water etc will collect on the filter, which will weaken the adhesive seal and prevent ventilation.

Drawing



Installation drawing

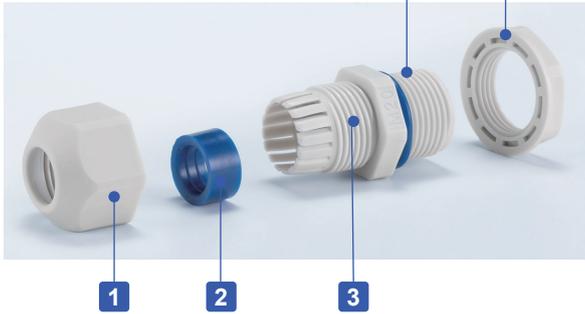


Components

| No. | Part name | Material | Color |
|-----|------------------|------------------|-------------|
| 1 | Adhesive | Acrylic adhesive | Transparent |
| 2 | Filter | PTFE | White |
| 3 | Support material | Polyester fabric | White |

Product no. / Dimensions

| Product no. | Outer dimension (Φ) | Filter effective diameter (Φ) | Thickness | Sales unit |
|-------------|---------------------|-------------------------------|-----------|---------------------|
| VSC075 | 7.5 | 4.0 | 0.35 | 5 pcs (per pack) |
| VSC130 | 13.0 | 8.0 | 0.35 | 4 pcs (per pack) |
| VSC240 | 24.0 | 16.0 | 0.35 | 4 pcs (per pack) |
| VSC075-S | 7.5 | 4.0 | 0.35 | 100 pcs (per sheet) |
| VSC130-S | 13.0 | 8.0 | 0.35 | 56 pcs (per sheet) |
| VSC240-S | 24.0 | 16.0 | 0.35 | 20 pcs (per sheet) |



- 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.

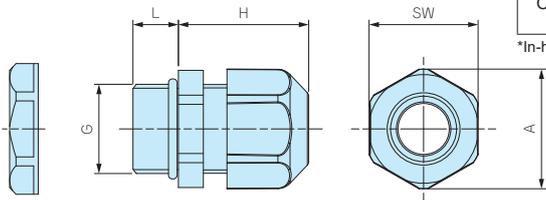
Components

■ 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

■ Lock nut is not included for RMW10S-6.

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

Cap design varies by size



RMW40 or smaller



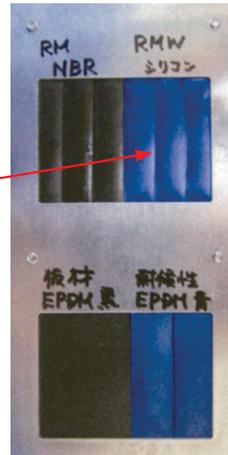
RMW50

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/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



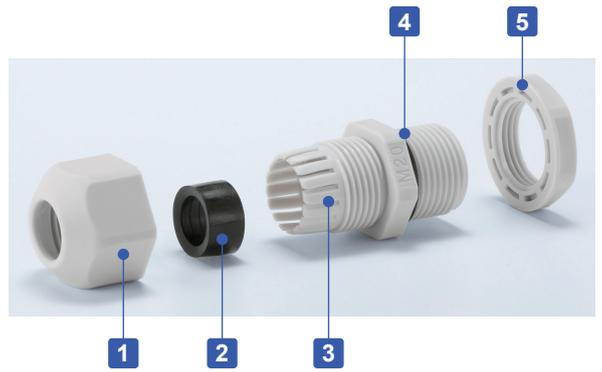
EPDM material from weatherproof cable gland of another manufacturer : Cracked, color drastically faded and powder appeared on the surface.

Before



After





- Low cost cable glands made from polyamide material.
- Wide selection, for M8 ~ M63, suitable for Φ 1mm ~ Φ 44 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°C ~ +80°C |

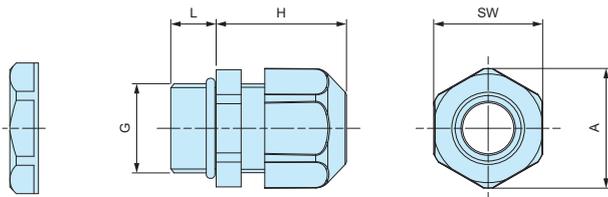
*In-house test

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 | Φ8.2 | 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 | Φ8.2 | 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 | Φ10.2 | 3 | 6 | 13 | 20.5 | 13 | 14.6 | 1 |
| RM12S-7B | RM12S-7S | M12×1.5 | Φ12.2 | 3.5 | 7 | 9 | 20.5 | 16 | 17.7 | 1 |
| RM12L-7B | RM12L-7S | M12×1.5 | Φ12.2 | 3.5 | 7 | 14.5 | 20.5 | 16 | 17.7 | 1 |
| RM16S-8B | RM16S-8S | M16×1.5 | Φ16.2 | 4 | 8 | 9 | 23.5 | 19.2 | 21.3 | 1 |
| RM16L-8B | RM16L-8S | M16×1.5 | Φ16.2 | 4 | 8 | 15 | 24 | 19.2 | 21.3 | 1 |
| RM20S-12B | RM20S-12S | M20×1.5 | Φ20.2 | 6 | 12 | 10 | 29 | 24.3 | 26.8 | 1 |
| RM20L-12B | RM20L-12S | M20×1.5 | Φ20.2 | 6 | 12 | 15 | 28.5 | 24.3 | 26.8 | 1 |
| RM25L-17B | RM25L-17S | M25×1.5 | Φ25.2 | 11 | 17 | 15 | 35 | 33.3 | 36.8 | 1 |
| RM32L-21B | RM32L-21S | M32×1.5 | Φ32.3 | 13 | 21 | 15 | 38 | 36.1 | 39.8 | 1 |
| RM40L-27B | RM40L-27S | M40×1.5 | Φ40.3 | 18 | 27 | 18 | 43.5 | 46.1 | 51.2 | 1 |
| RM50L-38B | RM50L-38S | M50×1.5 | Φ50.4 | 27 | 38 | 20 | 50.5 | 60 | 66.5 | 1 |
| RM63L-44B | RM63L-44S | M63×1.5 | Φ63.4 | 37 | 44 | 20 | 53 | 68 | 75.5 | 1 |
| RM10L-6B-P | RM10L-6S-P | M10×1.5 | Φ10.2 | 3 | 6 | 13 | 20.5 | 13 | 14.6 | 100 |
| RM12S-7B-P | RM12S-7S-P | M12×1.5 | Φ12.2 | 3.5 | 7 | 9 | 20.5 | 16 | 17.7 | 100 |
| RM12L-7B-P | RM12L-7S-P | M12×1.5 | Φ12.2 | 3.5 | 7 | 14.5 | 20.5 | 16 | 17.7 | 100 |
| RM16S-8B-P | RM16S-8S-P | M16×1.5 | Φ16.2 | 4 | 8 | 9 | 23.5 | 19.2 | 21.3 | 100 |
| RM16L-8B-P | RM16L-8S-P | M16×1.5 | Φ16.2 | 4 | 8 | 15 | 24 | 19.2 | 21.3 | 100 |
| RM20S-12B-P | RM20S-12S-P | M20×1.5 | Φ20.2 | 6 | 12 | 10 | 29 | 24.3 | 26.8 | 100 |
| RM20L-12B-P | RM20L-12S-P | M20×1.5 | Φ20.2 | 6 | 12 | 15 | 28.5 | 24.3 | 26.8 | 100 |
| RM25L-17B-P | RM25L-17S-P | M25×1.5 | Φ25.2 | 11 | 17 | 15 | 35 | 33.3 | 36.8 | 100 |

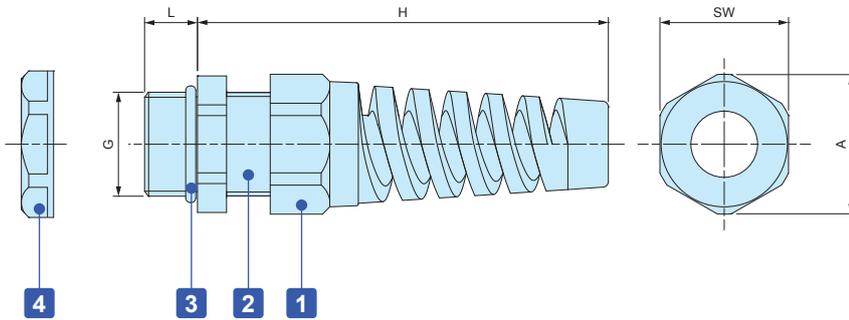


- A total of 14 models available for selection.
- Strain relief cap protects cables by preventing it from bending beyond its limit and breaking.
- Economical price but high waterproofing capability equivalent to IP67.

| Technical Data |
|--|
| Protection class : Equivalent to IP67* |
| Operating temperature : -20°C ~ +80°C |
| <small>*In-house test</small> |

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

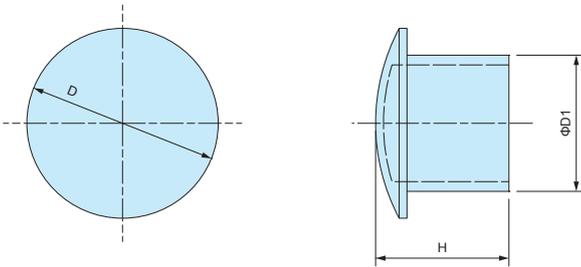
| Product no. | | G | | Cable range | | L | H | SW | A | Pack of |
|-------------|--------------|-------------|---------------|-------------|-----|------|-----|------|------|---------|
| ● Black | ● Light gray | Thread size | Mounting hole | Min | Max | | | | | |
| RSP 8-2.5B | RSP 8-2.5S | M 8×1.25 | 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 |

SP SERIES

SEALING PLUG



SP dimensions



■ Material : Nylon

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

Product no. / Dimensions

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



- High water protection IP68 (1bar / 30min) polyamide cable gland.
- Wide selection, for M8 ~ M50, suitable for 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.

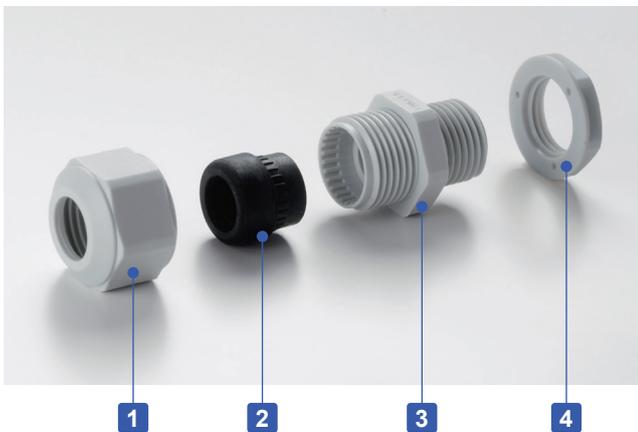
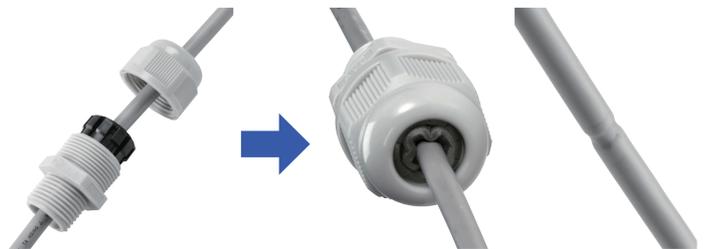
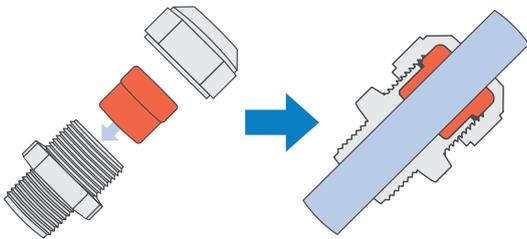
| Technical Data |
|--|
| Protection class : IP68 1bar / 30min |
| Operating temperature : -20°C ~ +100°C |
| Compliant with EN50262 Ver. A |

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 |

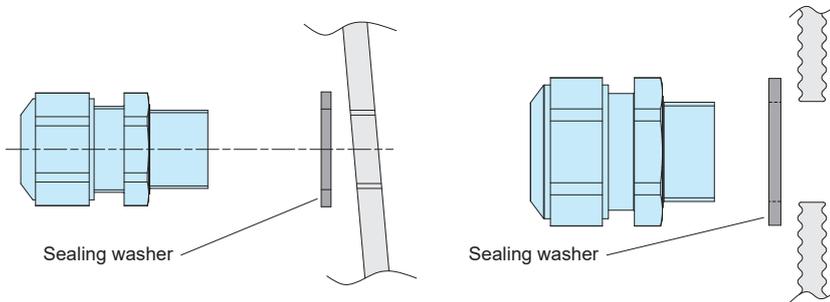
■ Lock nut is not included for M8 and M10 sizes.
Please drill an appropriate thread hole into the enclosure for installation.

- 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.



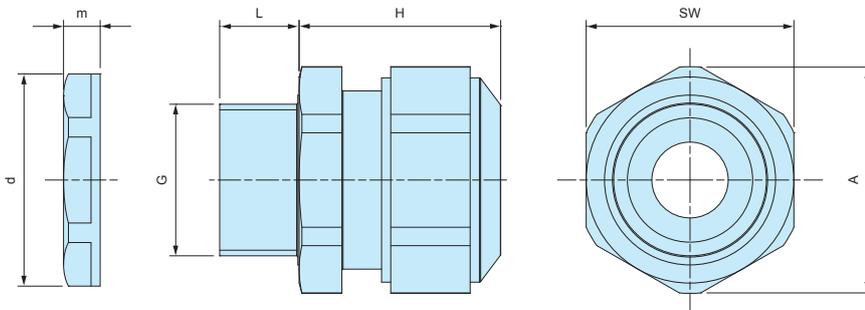
■ No optional sealing washer is required when installing on an even surface because of the built-in waterproof rib.

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



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 |

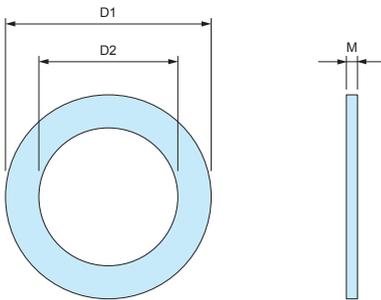
AGP SERIES

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 |

IP68



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

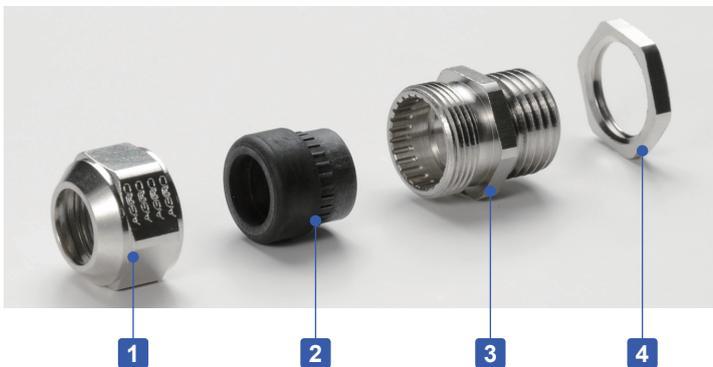
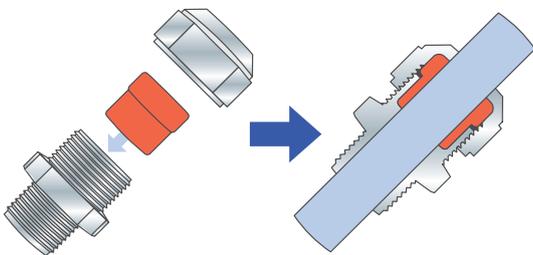
| Technical Data |
|--|
| Protection class : IP68 1bar / 30min |
| Operating temperature : -40°C ~ +100°C |
| Compliant with EN50262 Ver. A |

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.

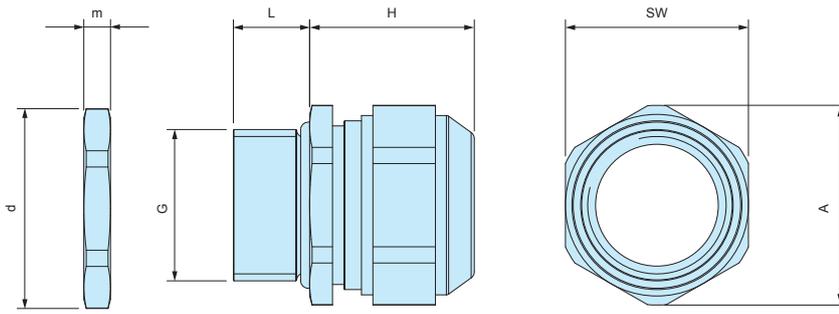


Components

| 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 |

DIGITAL PRINTED OVERLAY



3 reasons for low initial costs

Reason 1



Cutting process



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

Reason 2

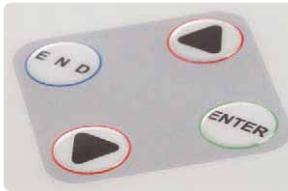


Printing process



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

Reason 3



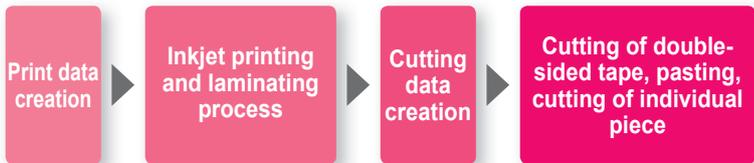
Embossing process



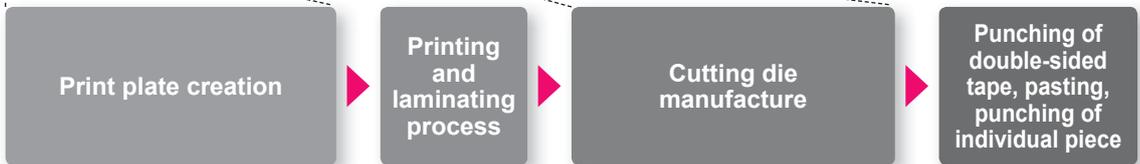
Reducing the cost for the embossing die via our new die manufacturing process.

Comparison of current and previous manufacturing methods

Current



Previous



PRODUCTION PROCESS



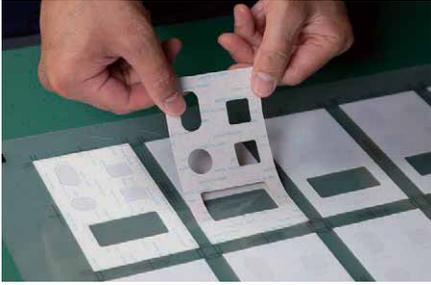
1. Inkjet printing on film



2. Laminating



3. Cutting double-sided tape



4. Sticking double-sided tape on printed film



5. Cutting the sheet to size



6. Embossing



7. Machining on enclosure



8. Sticking overlay sheet onto enclosure



9. Complete

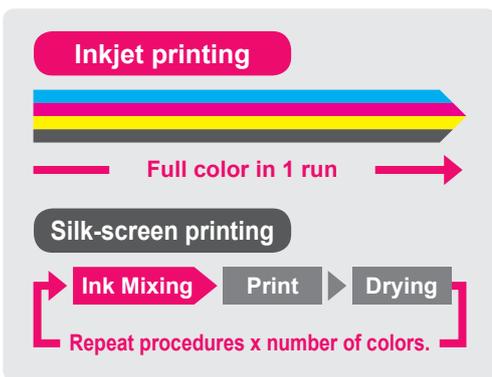
CUSTOMIZATION EXAMPLE



INKJET PRINTING



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



Low printing cost
Full color print possible in small quantities

Inkjet printing 1 run only for full color print

Printing cost Full color

Silk-screen printing Printing cost x number of colors

| | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|
| Printing cost Color 1 | Printing cost Color 2 | Printing cost Color 3 | Printing cost Color 4 |
|-----------------------|-----------------------|-----------------------|-----------------------|

High quality printing of photo image and color gradation.

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

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



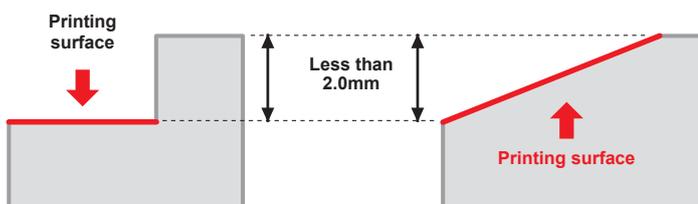
Maximum printable enclosure size



Printable on surfaces with height differential

Printing is possible on recessed, sloped and rounded sections.

Gap difference is less than 2.0mm.



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



Printed example



CNC MACHINING

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



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

