

# 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

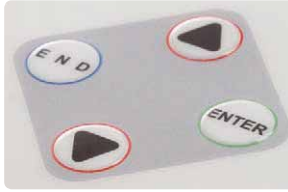


**Printing process**



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

Reason 3



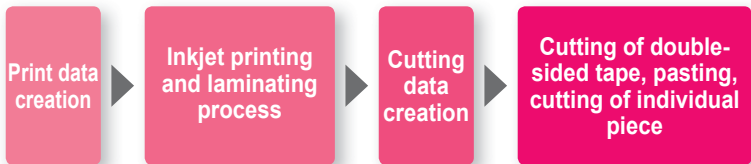
**Embossing process**



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

## Comparison of current and previous manufacturing methods

Current



Previous



# PRODUCTION PROCESS



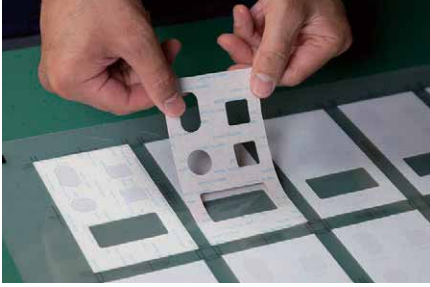
1. Inkjet printing on film



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

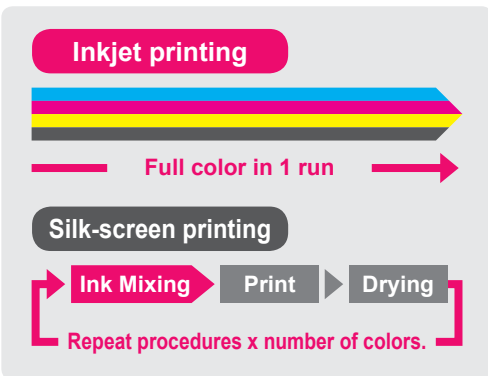
# CUSTOMIZATION EXAMPLE



# 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.



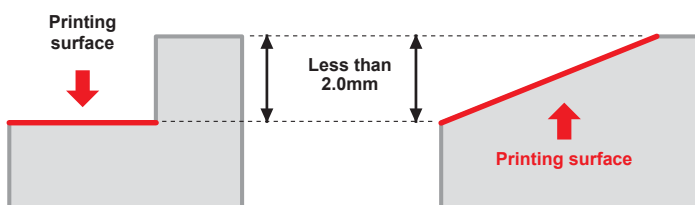
## Maximum printable enclosure size



## 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

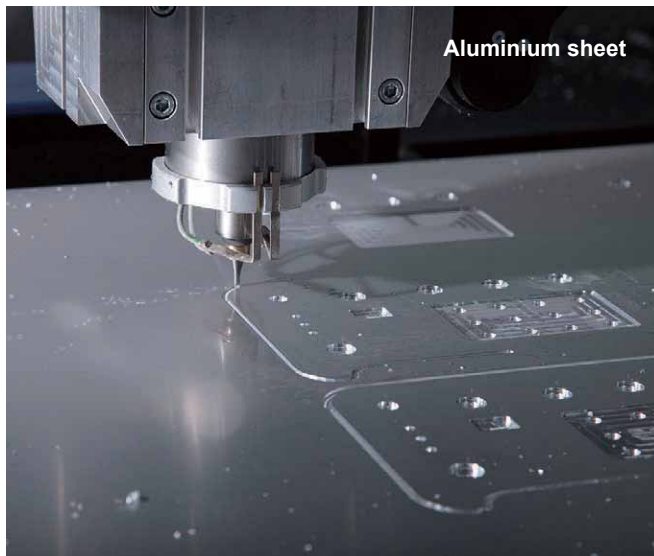


# CNC MACHINING

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.



# PROTECTION CLASS (IP RATING)











**IP67**  
is

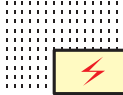
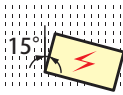
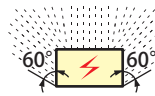
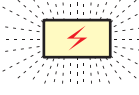
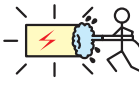
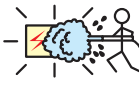
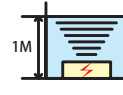

● IEC60529 standard is a system for classifying the degrees of protection provided by the enclosures of electrical equipment, such as against dust and water.

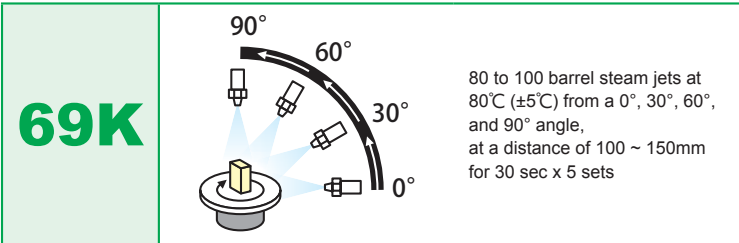
**IP**

## First digit : Solid particle protection

## Second digit: Liquid ingress protection

No.	Protection against ingress of solid foreign objects	Protection against access to hazardous parts
<b>0</b>	<b>No Protection</b>	<b>No Protection</b>
<b>1</b>	 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.)
<b>2</b>	 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)
<b>3</b>	 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)
<b>4</b>	 Protected against solid objects over 1.0mm.	 1.0 Protected against accidental touch by most wires and screws. (Tested with a 1.0mm diameter, 100mm long wire)
<b>5</b>	 Protected against dust; limited ingress, no harmful deposits.	
<b>6</b>	 Complete protection against dust.	

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



### 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.

# 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.



Photo : 13° type



## Best suited for desktop operation with its sloped surface.

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



Digital Card Reader



Transmitter · Network Equipment



## How to make waterproof buttons and switches

Please utilize a waterproof membrane keypad, membrane switch or overlay.  
Note that the waterproof performance will be lost by drilling/milling holes or cutouts for buttons or switches on waterproof enclosures.



## How to make waterproof cable hole

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 medical, research or measurement equipments.

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 screw M2.5-8	Unfinished
5	Rubber feet	4	Polyurethane	Transparent

Accessories (Optional parts)



PCB mounting screw EM series  
See page EM • MR-1



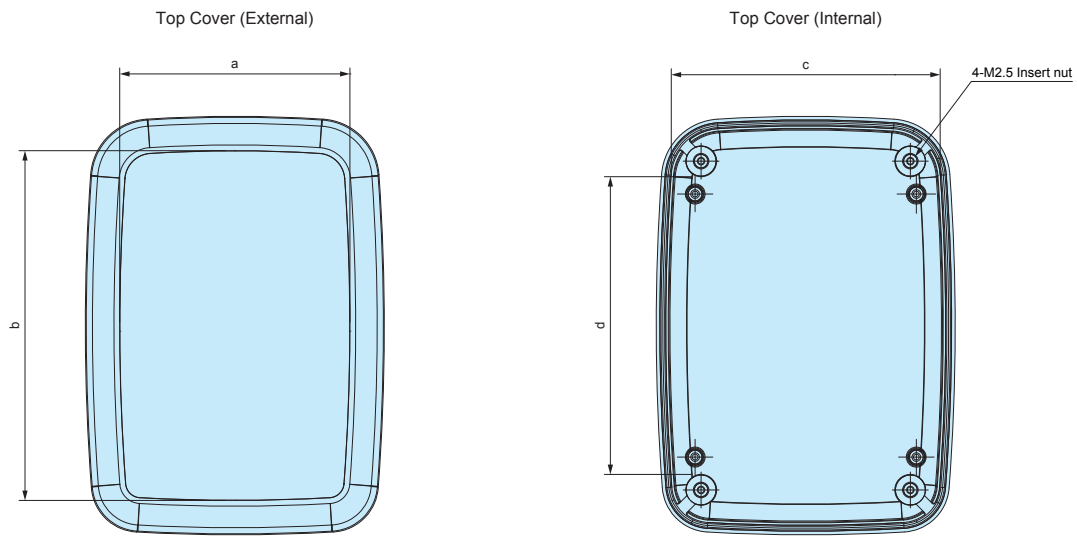
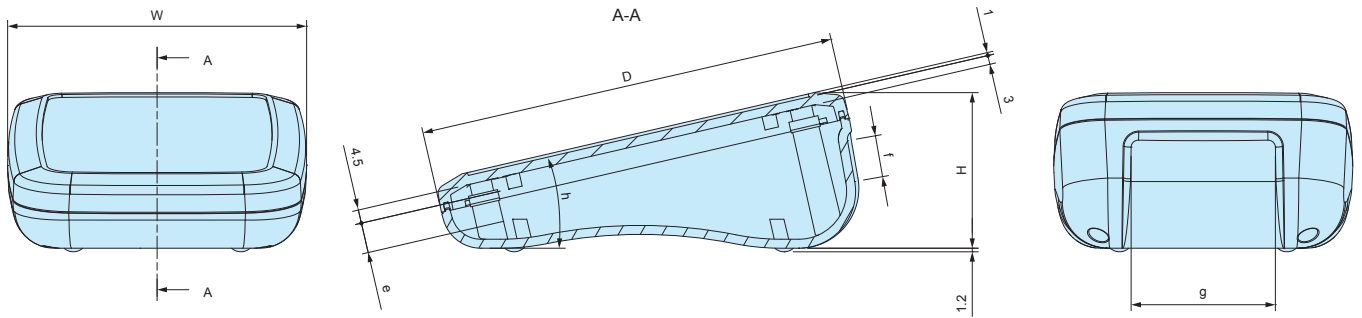
Cable gland  
See cable gland pages



TORX screw MR series  
See page EM • MR-1

WSC dimensions

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

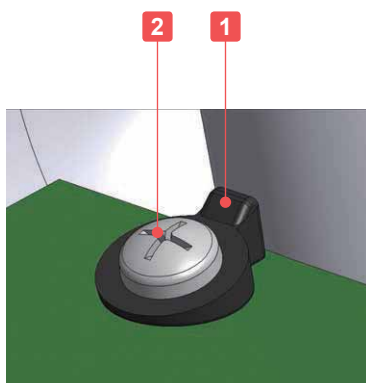


Product no. / Dimensions

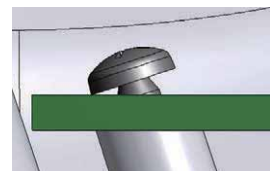
Product no.		Dimensions										Face angle	
● Off white	● Black	W	D	H	a	b	c	d	e	f	g	h	
<b>NEW</b> WSC10-14-5W	<b>NEW</b> WSC10-14-5B	100	140	52	77	117	87	100	10	13.9	48.2	13°	
<b>NEW</b> WSC10-14-7W	<b>NEW</b> WSC10-14-7B	100	140	72	77	117	87	100	22	27.4	48.2	18°	
<b>NEW</b> WSC14-14-5W	<b>NEW</b> WSC14-14-5B	140	140	52	117	117	128	100	10	13.8	80.5	13°	
<b>NEW</b> WSC14-14-7W	<b>NEW</b> WSC14-14-7B	140	140	72	117	117	128	100	22	27.4	80.5	18°	
<b>NEW</b> WSC18-14-5W	<b>NEW</b> WSC18-14-5B	175	140	52	152	117	163	95	11.3	13.8	103.5	13°	
<b>NEW</b> WSC18-14-7W	<b>NEW</b> WSC18-14-7B	175	140	72	152	117	163	95	23.7	27.4	103.5	18°	

WSP-M2.3

INCLINED SPACER



- Due to the sloped shape of the WSC series, boss-tops are also angled. So when mounting PCB on, some gap between the screw head and PCB surface will be generated as shown 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 22)



Components




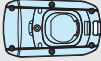
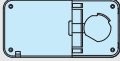



No.	Part name	Pcs	Material	Color / Finish
1	Inclined spacer	4	POM	Black
2	Screw (Tapping M2.3-8)	4	Steel	Trivalent chromate

■ Torque 0.1N · m






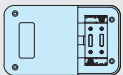
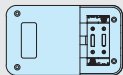
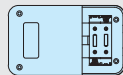
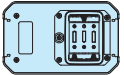
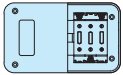
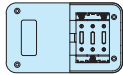
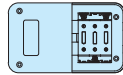
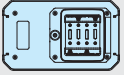
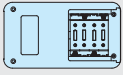
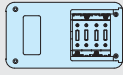
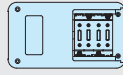
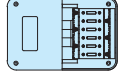
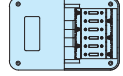
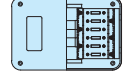
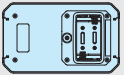
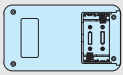
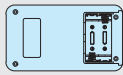
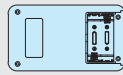
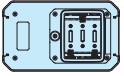
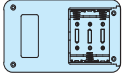
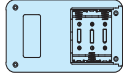
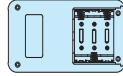

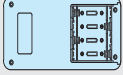
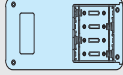
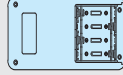
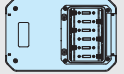
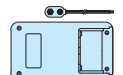
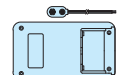
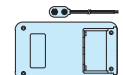
Product no. / Details

Product no.	Suitable enclosures	Pcs
<b>NEW</b> WSP-M2.3	WSC (for bottom base PCB boss)	4

# BUILT-IN BATTERY COMPARTMENT MODEL CHART

Series	WC Series Page37 ~ 42	CS Series Page47 ~ 52	CSS Series Page45 ~ 46
Battery Compartment			
CR2032 x 1	 WC72-15 (43×15.5×72) WC72-21 (43×21.5×72) WC90-15 (44.2×15.7×90)	 CS75 (35×12×75) CS90 (45×12×90)	 CSS75 (38.6×15.5×78.6) CSS90 (48.6×15.5×93.6)
CR2032 x 2		 CS115 (63×12×115)	 CSS115 (67.1×16×119.1)
AAA x 2			
AAA x 3			
AAA x 4			
AAA x 6			
AA x 2			
AA x 3			
AA x 4			
AA x 6			
9V x 1			

■ Enclosure shape, model number, and dimensions (W x H x D) are listed.

WH Series Page7 ~ 14	LC Series Page27 ~ 28	LCS Series Page23 ~ 26	LCT Series Page19 ~ 22
			
 <p>WH125-20-F2 (79×20×126) WH125-28-F2 (79×28×126)</p>	 <p>LC115-F2 (69×19.5×115) LC115H-F2 (69×28×115)</p>	 <p>LCS115-F2 (74×24×120) LCS115H-F2 (74×32.5×120)</p>	 <p>LCT115-F2 (76×28×121.9) LCT115H-F2 (76×36.5×121.9)</p>
 <p>WH125-20-F3 (79×20×126) WH125-28-F3 (79×28×126)</p>	 <p>LC115-F3 (69×19.5×115) LC115H-F3 (69×28×115)</p>	 <p>LCS115-F3 (74×24×120) LCS115H-F3 (74×32.5×120)</p>	 <p>LCT115-F3 (76×28×121.9) LCT115H-F3 (76×36.5×121.9))</p>
 <p>WH145-20-F4 (88×20×146)</p>	 <p>LC135-F4 (76×27×135) LC135H-F4 (76×35×135)</p>	 <p>LCS135-F4 (81×32×141) LCS135H-F4 (81×40×141)</p>	 <p>LCT135-F4 (85×40×143.9) LCT135H-F4 (85×48×143.9)</p>
	 <p>LC145-F6 (96×20×145) LC145H-F6 (96×27×145) LC145H-F6 (96×35×145)</p>	 <p>LCS145-F6 (101×25×151) LCS145H-F6 (101×32×151) LCS145H-F6 (101×40×151)</p>	 <p>LCT145-F6 (105×33×153.9) LCT145H-F6 (105×40×153.9) LCT145H-F6 (105×48×153.9)</p>
 <p>WH145-25-M2 (88×25×146) WH145-33-M2 (88×33×146)</p>	 <p>LC115H-M2 (69×28×115) LC135-M2 (76×27×135) LC135H-M2 (76×35×135) LC145-M2 (96×27×145) LC145H-M2 (96×35×145)</p>	 <p>LCS115H-M2 (74×32.5×120) LCS135-M2 (81×32×141) LCS135H-M2 (81×40×141) LCS145-M2 (101×32×151) LCS145H-M2 (101×40×151)</p>	 <p>LCT115H-M2 (76×36.5×121.9) LCT135-M2 (85×40×143.9) LCT135H-M2 (85×48×143.9) LCT145-M2 (105×40×153.9) LCT145H-M2 (105×48×153.9)</p>
 <p>WH145-25-M3 (88×25×146) WH145-33-M3 (88×33×146)</p>	 <p>LC135-M3 (76×27×135) LC135H-M3 (76×35×135)</p>	 <p>LCS135-M3 (81×32×141) LCS135H-M3 (81×40×141)</p>	 <p>LCT135-M3 (85×40×143.9) LCT135H-M3 (85×48×143.9)</p>
 <p>WH170-25-M4 (95×25×171) WH170-33-M4 (95×33×171)</p>	 <p>LC145-M4 (96×27×145) LC145H-M4 (96×35×145) LC165-M4 (80×27×165) LC165H-M4 (80×35×165)</p>	 <p>LCS145-M4 (101×32×151) LCS145H-M4 (101×40×151) LCS165-M4 (85×32×171) LCS165H-M4 (85×40×171)</p>	 <p>LCT145-M4 (105×40×153.9) LCT145H-M4 (105×48×153.9) LCT165-M4 (89×40×173.9) LCT165H-M4 (89×48×173.9)</p>
 <p>WH190-25-M6 (126×25×191) WH190-33-M6 (126×33×191)</p>			
	 <p>LC115H-9V (69×28×115) LC135-9V (76×27×135) LC135H-9V (76×35×135)</p>	 <p>LCS115H-9V (74×32.5×120) LCS135-9V (81×32×141) LCS135H-9V (81×40×141)</p>	 <p>LCT115H-9V (76×36.5×121.9) LCT135-9V (85×40×143.9) LCT135H-9V (85×48×143.9)</p>

\*Dimensions shown for CSS, LCT and LCS series are with silicone cover attached.

# WH SERIES

## IP67 WATERPROOF HAND-HELD ENCLOSURE



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

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

**IPx7 : No ingress of water when submerged up to a depth of 1 meter for 30 minutes**

### High waterproof performance with a silicone gasket

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

### Side grip provides great protection

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



### Available in 10 different color combinations.



# How to Make Waterproof Buttons and Switches



Please utilize a waterproof membrane keypad or membrane switch.

Note that the waterproof ability will be voided if holes are made for buttons or switches on the waterproof enclosures.



# APPLICATION EXAMPLE

Suitable for industrial measuring instruments, transceiver, controller, medical equipment and so on.



## ULTRASONIC THICKNESS MEASUREMENT GAUGE

Product by NOVOTEST (Ukraine)



## SIGFOX NETWORK MEASUREMENT DEVICE

Product by Simple Hardware (Czech Republic)

## WIRELESS TEMPERATURE DETECTOR

Product by BRESIMAR AUTOMAÇÃO (Portugal)



※See page 53 for more information on Sigfox network.

## GPS TRACKER

Product by Averos (Saudi Arabia)



## GPS SYNCHRONIZED PIPELINE SURVEY METER

Product by Corrosion Instruments (Australia)



## BABY RESPIRATION SENSOR (NURSERY use)

Product by Liquid Design Systems (Japan)



## HONEY BEE TRACKER

Product by APIS Technology (Portugal)



## INDUSTRIAL TABLET



## DIGITAL X-RAY SYSTEM

Product by SmartRayVision (USA)



## AUTOMATIC VIDEO TIMING TRACKING SYSTEM

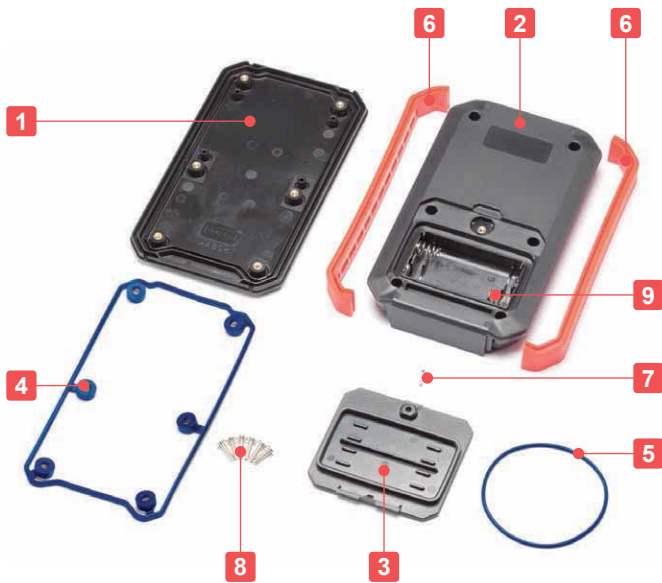
Product by FlashTiming (USA)







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



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

Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS UL94V-0	Off-white • Black
2	Bottom cover	1	ABS UL94V-0	Off-white • Black
3	Battery cover (None for N-type)	1	ABS UL94V-0	Off-white • Black
4	Gasket	1	Silicone	N • F2 • F3 • M4 type : Black
5	O-ring (None for N-type)	1	Silicone	M2 type : Blue
				M3 • F4 • type : Light gray
6	Side grip	2	TPE	Black • Light gray • Navy • Red • Yellow
7	Battery cover screw (None for N-type)	1	Stainless steel M2.5-6	Unfinished
8	Screw	6	Stainless steel M2.5-6	Unfinished
9	Battery contact (None for N-type)	1 set	Brass	Nickel plated

Accessories (Optional parts)



PCB mounting screw EM-2.3  
See page EM • MR-1



Tapping standoff TPS series  
See page TPS • MT-1



Cable gland  
See cable gland pages



Neodymium magnet NMG series  
See page NMG-1

Battery Compartment Types

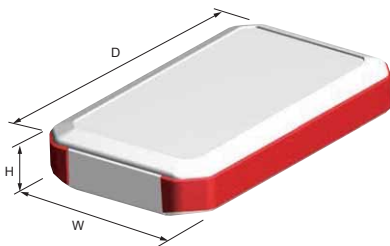
Type	N None	F2 AAA x 2	F3 AAA x 3	F4 AAA x 4	M2 AA x 2	M3 AA x 3	M4 AA x 4	M6 AA x 6
Battery Compartment								

Color Type

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

Product no. / Dimensions

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

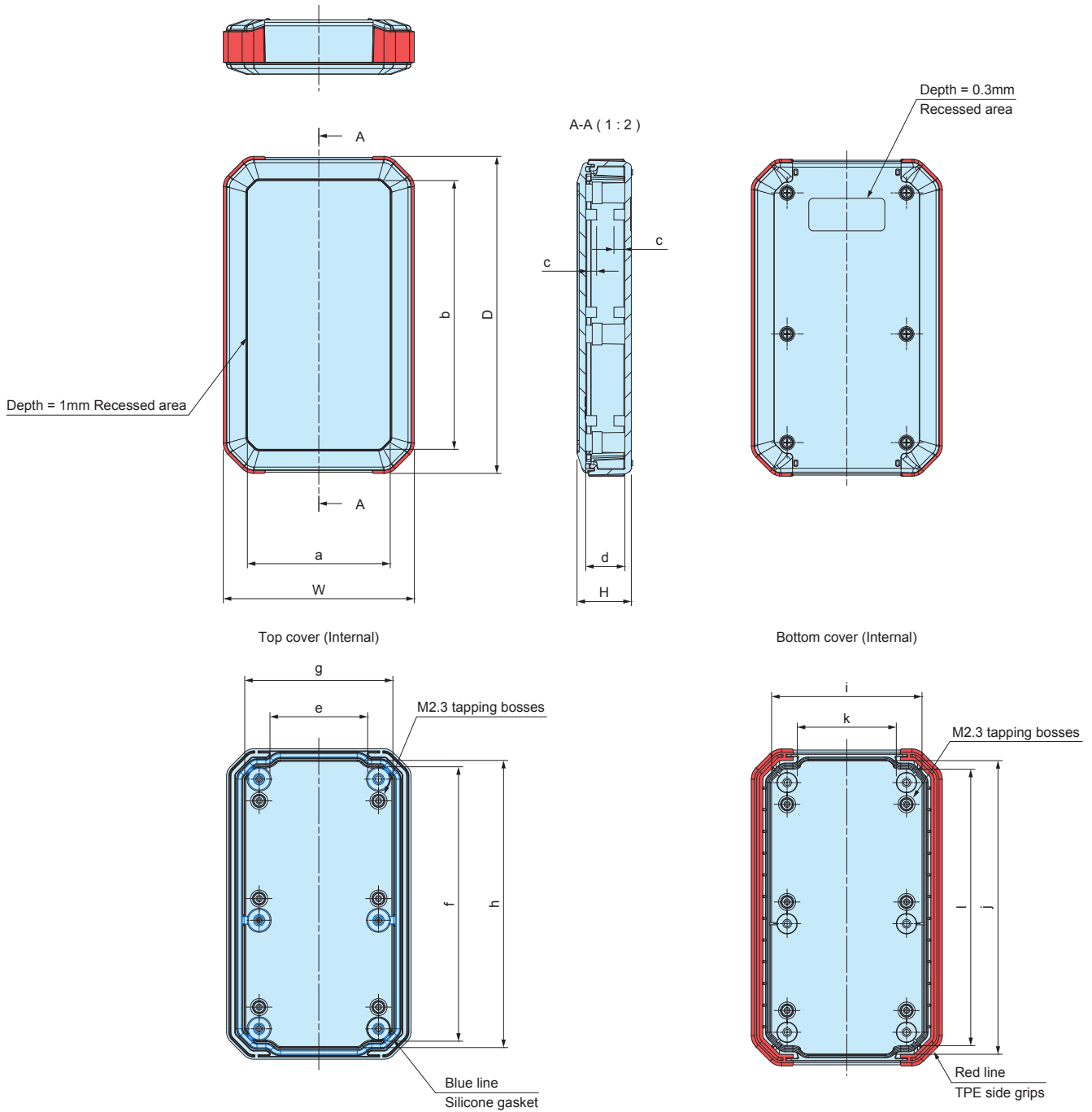


Product no.	W	H	D	Battery compartment	Weight (g)
WH125-20-N -□□	79	20	126	None	101.0
WH125-20-F2 -□□	79	20	126	AAA x 2	102.0
WH125-20-F3 -□□	79	20	126	AAA x 3	109.0
WH125-28-N -□□	79	28	126	None	119.0
WH125-28-F2 -□□	79	28	126	AAA x 2	121.0
WH125-28-F3 -□□	79	28	126	AAA x 3	127.0
WH145-20-N -□□	88	20	146	None	125.5
WH145-20-F4 -□□	88	20	146	AAA x 4	129.5
WH145-25-N -□□	88	25	146	None	137.5
WH145-25-M2 -□□	88	25	146	AA x 2	161.5
WH145-25-M3 -□□	88	25	146	AA x 3	159.5
WH145-33-N -□□	88	33	146	None	162.0
WH145-33-M2 -□□	88	33	146	AA x 2	180.5
WH145-33-M3 -□□	88	33	146	AA x 3	181.5
WH170-25-N -□□	95	25	171	None	169.0
WH170-25-M4 -□□	95	25	171	AA x 4	195.0
WH170-33-N -□□	95	33	171	None	191.0
WH170-33-M4 -□□	95	33	171	AA x 4	220.0
<b>NEW</b> WH190-25-N -□□	126	25	191	None	226.0
<b>NEW</b> WH190-25-M6 -□□	126	25	191	AA x 6	276.0
<b>NEW</b> WH190-33-N -□□	126	33	191	None	252.0
<b>NEW</b> WH190-33-M6 -□□	126	33	191	AA x 6	307.0

**WH dimensions**

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

WH125-20-N / WH125-28-N  
WH145-20-N / WH145-25-N / WH145-33-N  
WH170-25-N / WH170-33-N / WH190-25-N / WH190-33-N

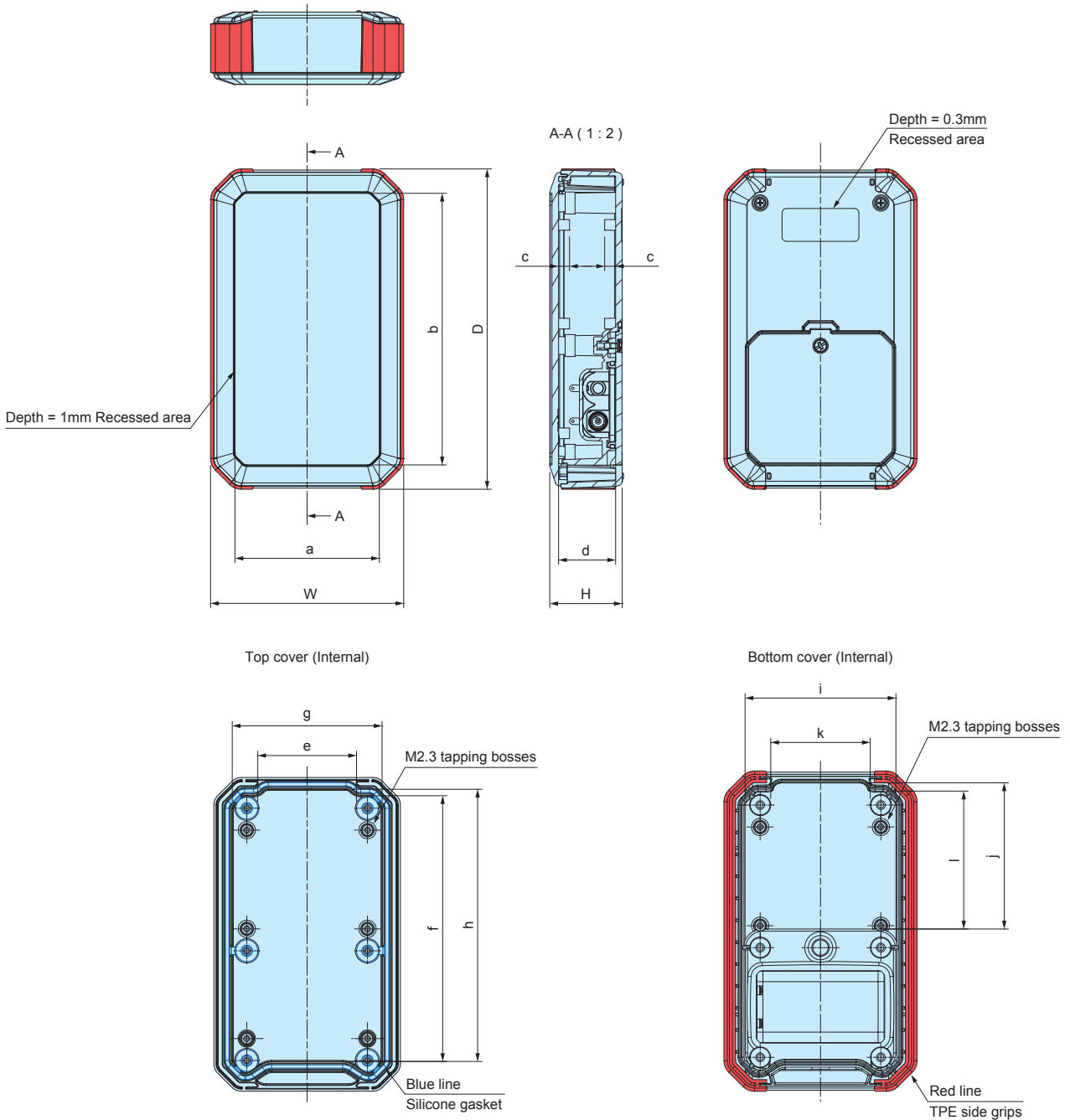


Product no.	W	H	D	a	b	c	d	e	f	g	h	i	j	k	l
WH125-20-N-□□	79	20	126	58.8	105.8	4	13	39	107	60	112.6	61.6	115.8	39	108
WH125-28-N-□□	79	28	126	58.8	105.8	4	21	39	107	60	112.6	61.1	115.8	39	108
WH145-20-N-□□	88	20	146	65.8	123.8	5	13	45	125.2	68.3	132.3	69.6	135.2	45	127.6
WH145-25-N-□□	88	25	146	65.8	123.8	5	18	45	125.2	68.3	132.3	69.3	135.2	45	127.2
WH145-33-N-□□	88	33	146	65.8	123.8	5	26	45	125.2	68.3	132.3	68.7	135.2	45	126.7
WH170-25-N-□□	95	25	171	69.6	145.6	5	18	51	150	74.4	156	77.3	159.8	50.6	152
WH170-33-N-□□	95	33	171	69.6	145.6	5	26	51	150	74.4	156	76.7	159.8	50.3	151
WH190-25-N-□□	126	25	191	96	161	5	18	81	170.3	105.4	176.4	107.6	180.2	80.2	172.3
WH190-33-N-□□	126	33	191	96	161	5	26	81	170.3	105.4	176.4	107.1	180.3	79.6	171.8

WH dimensions

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

WH125-20-F2 / WH125-20-F3 / WH125-28-F2 / WH125-28-F3  
WH145-20-F4 / WH145-25-M2 / WH145-25-M3 / WH145-33-M2 / WH145-33-M3  
WH170-25-M4 / WH170-33-M4 / WH190-25-M6 / WH190-33-M6



Product no.	W	H	D	a	b	c	d	e	f	g	h	i	j	k	l
WH125-20-F2-□□	79	20	126	58.8	105.8	4	13	39	104	60	107	61.6	60.4	39	56.7
WH125-20-F3-□□	79	20	126	58.8	105.8	4	13	39	104	60	107	61.6	49.9	39	46.2
WH125-28-F2-□□	79	28	126	58.8	105.8	4	21	39	104	60	107	61.1	60.4	39	56.4
WH125-28-F3-□□	79	28	126	58.8	105.8	4	21	39	104	60	107	61.1	49.9	39	46.0
WH145-20-F4-□□	88	20	146	65.8	123.8	5	13	45	120	68.3	124.1	69.6	51.7	45	47.8
WH145-25-M2-□□	88	25	146	65.8	123.8	5	18	45	120	68.3	124.1	69.3	66.6	45	62.6
WH145-25-M3-□□	88	25	146	65.8	123.8	5	18	45	120	68.3	124.1	69.3	51.6	45	47.6
WH145-33-M2-□□	88	33	146	65.8	123.8	5	26	45	120	68.3	124.1	68.7	66.6	45	62.3
WH145-33-M3-□□	88	33	146	65.8	123.8	5	26	45	120	68.3	124.1	68.7	51.6	45	47.3
WH170-25-M4-□□	95	25	171	69.6	145.6	5	18	51	147.6	74.4	150.4	77.3	71.3	50.6	67.4
WH170-33-M4-□□	95	33	171	69.6	145.6	5	26	51	147.6	74.4	150.4	76.7	71.3	50.3	67.2
WH190-25-M6-□□	126	25	191	96	161	5	18	81	167.3	105.4	170.3	107.6	89.2	80.2	85.2
WH190-33-M6-□□	126	33	191	96	161	5	26	81	167.3	105.4	170.3	107.1	89.1	79.6	84.9

# LCT·LCS·LC·LCE HAND-HELD PLASTIC CASE

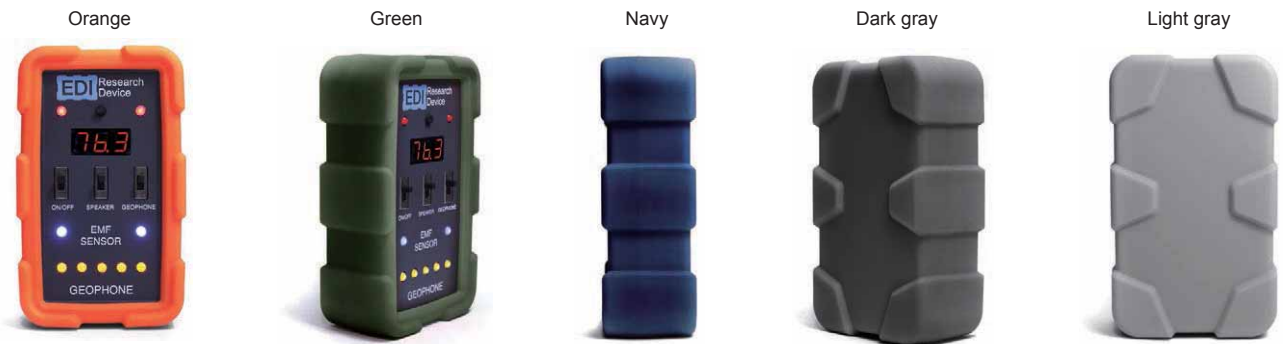
Hand-held case suitable for industrial measuring equipments, wireless communication devices and medical equipments.

8 different sizes and 9 different battery compartment types are available for LC plastic case.

LCS series comes with 7 silicone cover colors for selection.

LCT series is selectable in 5 different rugged shock-proof silicone cover colors.

## LCT Plastic case with shock-proof silicone cover



## LCS Plastic case with silicone cover



## CUSTOMIZATION



Machining



Custom cut on silicone cover



Custom color, custom shaped silicone cover



Digital printed overlay



# APPLICATION EXAMPLE

## METAL COATING THICKNESS GAUGE

Product by NOVOTEST (Ukraine)



## SOLAR PANEL TROUBLE CHECKER

Product by ITES (Japan)



## SOLAR CELL DISCONNECTION CHECKER

Product by Shinei Electronic Measuring (Japan)



## DIGITAL PRESSURE GAUGE SETTER

Product by NAGANO KEIKI (Japan)



## EMF DETECTOR

Product by CenTex Paranormal (USA)



## DISTRIBUTION TRANSFORMER TESTER

Product by ndb Technologies (Canada)



## NETWORK PARTIAL DISCHARGE CHECKER

Product by ndb Technologies (Canada)



## RADIATION SURVEY METER

Product by HISAKI Sekkei (Japan)



## MINI RADIATION SURVEY METER

Product by Techno AP (Japan)



## WIRELESS VOLTAGE PROBE

Product by Enertronics (Switzerland)



## PORTABLE ANEMOMETER

Product by FieldPro (Japan)



## ULTRASONIC THICKNESS GAUGE

Product by DEMAQ (Argentina)



## HYPERHIDROSIS TREATMENT DEVICE

Product by Merebit (Czech Republic)



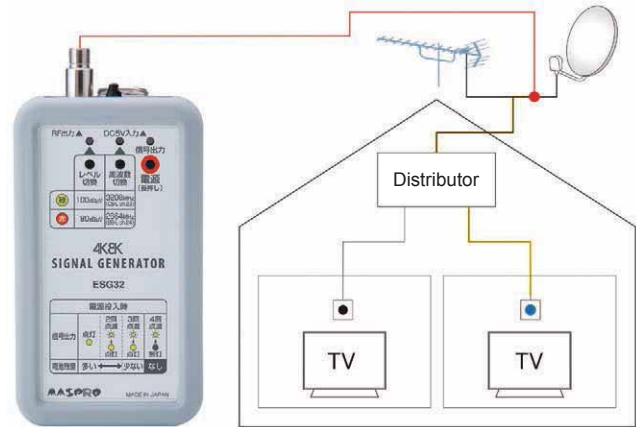
## RF SCOPE

Product by Arrow7 Corporation (Japan)



## SATELLITE BROADCASTING SIGNAL GENERATOR

Product by MASPRO (Japan)



## ONBOARD PROGRAMMER

Product by Hokuto Electronic (Japan)



## CODE DEBUGGER

Product by BITRAN (Japan)





# LCT SERIES

# HAND-HELD CASE with SHOCK-PROOF SILICONE COVER



### Technical Data

Protection class: IP40  
 Operating temperature: -10°C ~ +60°C

- Plastic case with shock-proof silicone cover. Protects the device from various impact.
- Manufactured with flame-resistant ABS UL94V-0 material. Selectable from a range of battery compartment types.
- Positive (+) / Negative (-) pole marks are incised on the inside of the battery compartments.
- Suitable for measuring instruments, test devices, wireless communication devices, medical devices and so on.

#### Battery compartment type

#### No battery compartment type



#### Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS UL94V-0	Off-white • Dark gray
2	Bottom cover	1	ABS UL94V-0	Off-white • Dark gray
3	Panel	1	ABS UL94V-0	Off-white • Dark gray
4	Self tapping screws	4	Steel M2.6	Nickel plated • Black trivalent chromate
5	Battery cover	1	ABS UL94V-0	Off-white • Dark gray
6	Battery contact • Battery snap	1 set	Brass • Brass • PVC	Nickel plated • Nickel plated : Black
7	Silicone cover	1	Silicone	Orange • Green • Navy • Dark gray • Light gray

#### Accessories (Optional parts)



Tapping standoff TPS series  
 See page TPS • MT-1



PCB mounting screw EM-2.3  
 See page EM • MR-1



TORX screw MR series  
 See page EM • MR-1

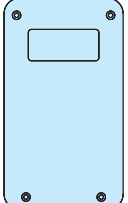
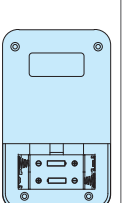
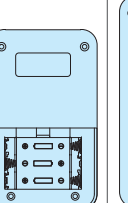
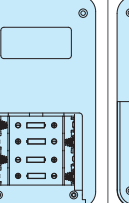
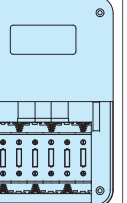
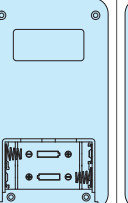
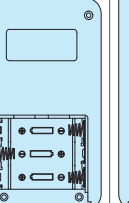
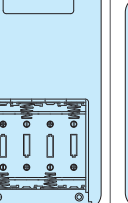
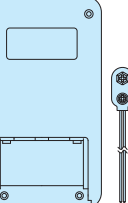


Key ring CR-20  
 See page STP • CR-1



Strap STP series  
 See page STP • CR-1

Battery Compartment Type

Type	N None	F2 AAA x 2	F3 AAA x 3	F4 AAA x 4	F6 AAA x 6	M2 AA x 2	M3 AA x 3	M4 AA x 4	9V 9V x 1
Battery compartment									

Color Type

Code	D/O Dark gray / Orange	D/G Dark gray / Green	D/N Dark gray / Navy	D/D Dark gray / Dark gray	D/L Dark gray / Light gray
Color					
Code	W/O Off-white / Orange	W/G Off-white / Green	W/N Off-white / Navy	W/D Off-white / Dark gray	W/L Off-white / Light gray
Color					

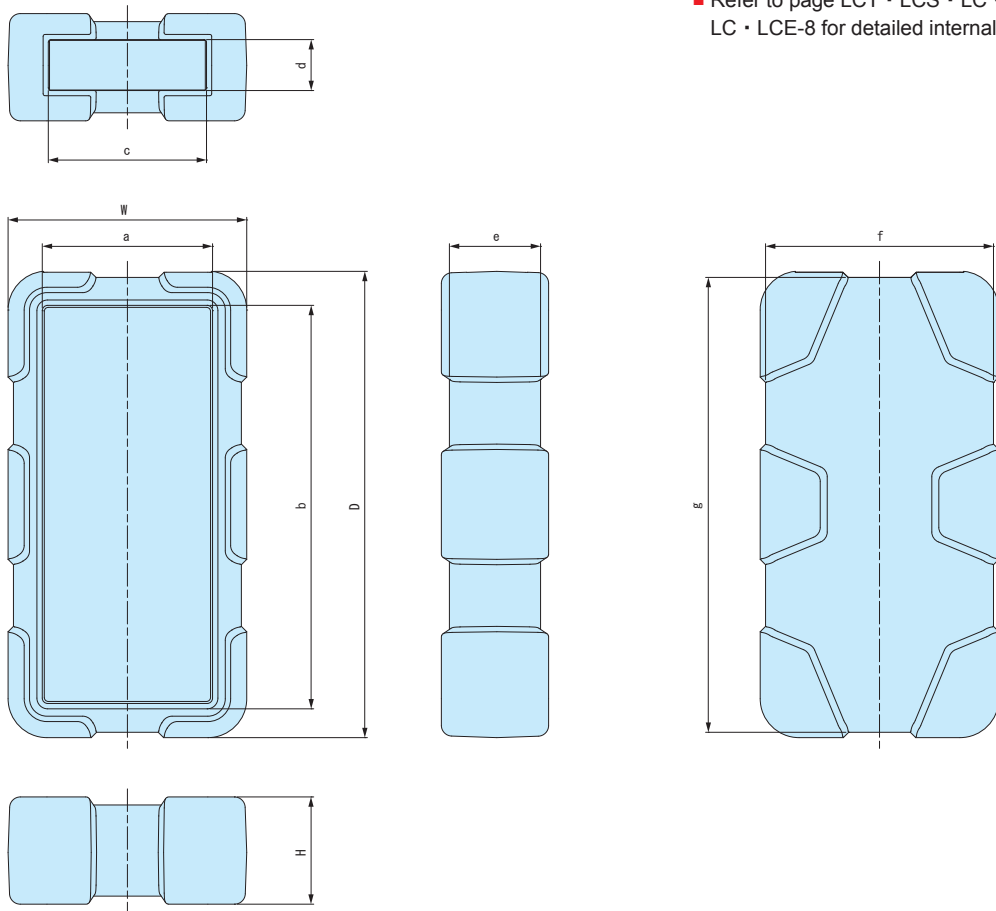
Product no. / Dimensions

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

Product no.	W	H	D	Battery compartment	Weight (g)
LCT115 -N -□□	76(69)	28(19.5)	121.9(115)	None	123.5
LCT115 -F2 -□□	76(69)	28(19.5)	121.9(115)	AAA x 2	128
LCT115 -F3 -□□	76(69)	28(19.5)	121.9(115)	AAA x 3	130
LCT115H-N -□□	76(69)	36.5(28)	121.9(115)	None	141
LCT115H-F2 -□□	76(69)	36.5(28)	121.9(115)	AAA x 2	145.5
LCT115H-F3 -□□	76(69)	36.5(28)	121.9(115)	AAA x 3	147
LCT115H-M2-□□	76(69)	36.5(28)	121.9(115)	AA x 2	149.5
LCT115H-9V-□□	76(69)	36.5(28)	121.9(115)	9V x 1	149
LCT135 -N -□□	85(76)	40(27)	143.9(135)	None	210.5
LCT135 -F4 -□□	85(76)	40(27)	143.9(135)	AAA x 4	225.5
LCT135 -M2-□□	85(76)	40(27)	143.9(135)	AA x 2	223.5
LCT135 -M3-□□	85(76)	40(27)	143.9(135)	AA x 3	229
LCT135 -9V-□□	85(76)	40(27)	143.9(135)	9V x 1	227
LCT135H-N -□□	85(76)	48(35)	143.9(135)	None	231.5
LCT135H-F4 -□□	85(76)	48(35)	143.9(135)	AAA x 4	246
LCT135H-M2-□□	85(76)	48(35)	143.9(135)	AA x 2	245
LCT135H-M3-□□	85(76)	48(35)	143.9(135)	AA x 3	250
LCT135H-9V-□□	85(76)	48(35)	143.9(135)	9V x 1	247.5
LCT145S-N -□□	105(96)	33(20)	153.9(145)	None	239.1
LCT145S-F6 -□□	105(96)	33(20)	153.9(145)	AAA x 6	259.1
LCT145 -N -□□	105(96)	40(27)	153.9(145)	None	258.5
LCT145 -F6 -□□	105(96)	40(27)	153.9(145)	AAA x 6	278.5
LCT145 -M2-□□	105(96)	40(27)	153.9(145)	AA x 2	272.5
LCT145 -M4-□□	105(96)	40(27)	153.9(145)	AA x 4	279.5
LCT145H-N -□□	105(96)	48(35)	153.9(145)	None	282
LCT145H-F6 -□□	105(96)	48(35)	153.9(145)	AAA x 6	302.5
LCT145H-M2-□□	105(96)	48(35)	153.9(145)	AA x 2	296
LCT145H-M4-□□	105(96)	48(35)	153.9(145)	AA x 4	303
LCT165 -N -□□	89(80)	40(27)	173.9(165)	None	263.5
LCT165 -M4-□□	89(80)	40(27)	173.9(165)	AA x 4	283
LCT165H-N -□□	89(80)	48(35)	173.9(165)	None	286
LCT165H-M4-□□	89(80)	48(35)	173.9(165)	AA x 4	305

■ ( ) value = enclosure dimension.

**Silicone cover dimensions**

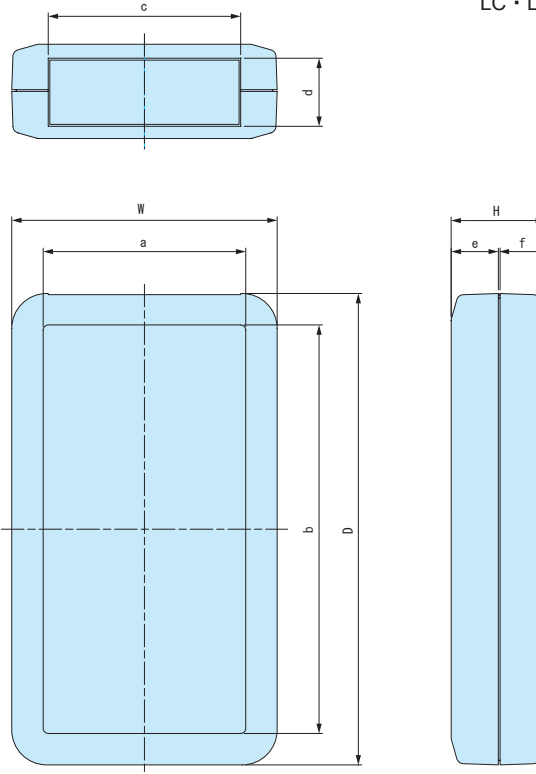


- Drawings below are reference examples only.  
DXF/DWG/PDF drawings available on our website.
- Refer to page LCT · LCS · LC · LCE-5 ~ LCT · LCS · LC · LCE-8 for detailed internal enclosure dimensions.

Product no.	W	H	D	a	b	c	d	e	f	g
LCT115 -N -□□	76	28	121.9	55.5	101.5	48.3	12	24	72	117.8
LCT115 -F2 -□□	76	28	121.9	55.5	101.5	48.3	12	24	72	117.8
LCT115 -F3 -□□	76	28	121.9	55.5	101.5	48.3	12	24	72	117.8
LCT115H -N -□□	76	36.5	121.9	55.5	101.5	48.3	20.5	32.5	72	117.8
LCT115H -F2 -□□	76	36.5	121.9	55.5	101.5	48.3	20.5	32.5	72	117.8
LCT115H -F3 -□□	76	36.5	121.9	55.5	101.5	48.3	20.5	32.5	72	117.8
LCT115H -M2 -□□	76	36.5	121.9	55.5	101.5	48.3	20.5	32.5	72	117.8
LCT115H -9V -□□	76	36.5	121.9	55.5	101.5	48.3	20.5	32.5	72	117.8
LCT135 -N -□□	85	40	143.9	59.5	118.5	55	19	34	81	139.7
LCT135 -F4 -□□	85	40	143.9	59.5	118.5	55	19	34	81	139.7
LCT135 -M2 -□□	85	40	143.9	59.5	118.5	55	19	34	81	139.7
LCT135 -M3 -□□	85	40	143.9	59.5	118.5	55	19	34	81	139.7
LCT135 -9V -□□	85	40	143.9	59.5	118.5	55	19	34	81	139.7
LCT135H -N -□□	85	48	143.9	59.5	118.5	55	27	42	81	139.6
LCT135H -F4 -□□	85	48	143.9	59.5	118.5	55	27	42	81	139.6
LCT135H -M2 -□□	85	48	143.9	59.5	118.5	55	27	42	81	139.6
LCT135H -M3 -□□	85	48	143.9	59.5	118.5	55	27	42	81	139.6
LCT135H -9V -□□	85	48	143.9	59.5	118.5	55	27	42	81	139.6
LCT145S -N -□□	105	33	153.9	76.5	125.5	71	12	27	101	149.9
LCT145S -F6 -□□	105	33	153.9	76.5	125.5	71	12	27	101	149.9
LCT145 -N -□□	105	40	153.9	76.5	125.5	71	19	34	101	149.7
LCT145 -F6 -□□	105	40	153.9	76.5	125.5	71	19	34	101	149.7
LCT145 -M2 -□□	105	40	153.9	76.5	125.5	71	19	34	101	149.7
LCT145 -M4 -□□	105	40	153.9	76.5	125.5	71	19	34	101	149.7
LCT145H -N -□□	105	48	153.9	76.5	125.5	71	27	42	101	149.7
LCT145H -F6 -□□	105	48	153.9	76.5	125.5	71	27	42	101	149.7
LCT145H -M2 -□□	105	48	153.9	76.5	125.5	71	27	42	101	149.7
LCT145H -M4 -□□	105	48	153.9	76.5	125.5	71	27	42	101	149.7
LCT165 -N -□□	89	40	173.9	63.5	148.5	59	19	34	85	169.7
LCT165 -M4 -□□	89	40	173.9	63.5	148.5	59	19	34	85	169.7
LCT165H -N -□□	89	48	173.9	63.5	148.5	59	27	42	85	169.6
LCT165H -M4 -□□	89	48	173.9	63.5	148.5	59	27	42	85	169.6

Enclosure dimensions

- Drawings below are reference examples only.  
DXF/DWG/PDF drawings available on our website.
- Refer to page LCT · LCS · LC · LCE-5 ~ LCT · LCS · LC · LCE-8 for detailed internal enclosure dimensions.



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

Product no.	W	H	D	a	b	c	d	e	f	Battery compartment
LCT115 -N -□□	69	19.5	115	54	100	48.1	12	10	9	None
LCT115 -F2 -□□	69	19.5	115	54	100	48.1	12	10	9	AAA x 2
LCT115 -F3 -□□	69	19.5	115	54	100	48.1	12	10	9	AAA x 3
LCT115H -N -□□	69	28	115	54	100	48.1	20.5	18.5	9	None
LCT115H -F2 -□□	69	28	115	54	100	48.1	20.5	18.5	9	AAA x 2
LCT115H -F3 -□□	69	28	115	54	100	48.1	20.5	18.5	9	AAA x 3
LCT115H -M2 -□□	69	28	115	54	100	48.1	20.5	18.5	9	AA x 2
LCT115H -9V -□□	69	28	115	54	100	48.1	20.5	18.5	9	9V x 1
LCT135 -N -□□	76	27	135	58	117	55.1	19.5	13.5	13	None
LCT135 -F4 -□□	76	27	135	58	117	55.1	19.5	13.5	13	AAA x 4
LCT135 -M2 -□□	76	27	135	58	117	55.1	19.5	13.5	13	AA x 2
LCT135 -M3 -□□	76	27	135	58	117	55.1	19.5	13.5	13	AA x 3
LCT135 -9V -□□	76	27	135	58	117	55.1	19.5	13.5	13	9V x 1
LCT135H -N -□□	76	35	135	58	117	55.1	27.5	21.5	13	None
LCT135H -F4 -□□	76	35	135	58	117	55.1	27.5	21.5	13	AAA x 4
LCT135H -M2 -□□	76	35	135	58	117	55.1	27.5	21.5	13	AA x 2
LCT135H -M3 -□□	76	35	135	58	117	55.1	27.5	21.5	13	AA x 3
LCT135H -9V -□□	76	35	135	58	117	55.1	27.5	21.5	13	9V x 1
LCT145S -N -□□	96	20	145	75	124	71.1	12.5	7.5	12	None
LCT145S -F6 -□□	96	20	145	75	124	71.1	12.5	7.5	12	AAA x 6
LCT145 -N -□□	96	27	145	75	124	71.1	19.5	14.5	12	None
LCT145 -F6 -□□	96	27	145	75	124	71.1	19.5	14.5	12	AAA x 6
LCT145 -M2 -□□	96	27	145	75	124	71.1	19.5	14.5	12	AA x 2
LCT145 -M4 -□□	96	27	145	75	124	71.1	19.5	14.5	12	AA x 4
LCT145H -N -□□	96	35	145	75	124	71.1	27.5	22.5	12	None
LCT145H -F6 -□□	96	35	145	75	124	71.1	27.5	22.5	12	AAA x 6
LCT145H -M2 -□□	96	35	145	75	124	71.1	27.5	22.5	12	AA x 2
LCT145H -M4 -□□	96	35	145	75	124	71.1	27.5	22.5	12	AA x 4
LCT165 -N -□□	80	27	165	62	147	59.1	19.5	13.5	13	None
LCT165 -M4 -□□	80	27	165	62	147	59.1	19.5	13.5	13	AA x 4
LCT165H -N -□□	80	35	165	62	147	59.1	27.5	21.5	13	None
LCT165H -M4 -□□	80	35	165	62	147	59.1	27.5	21.5	13	AA x 4

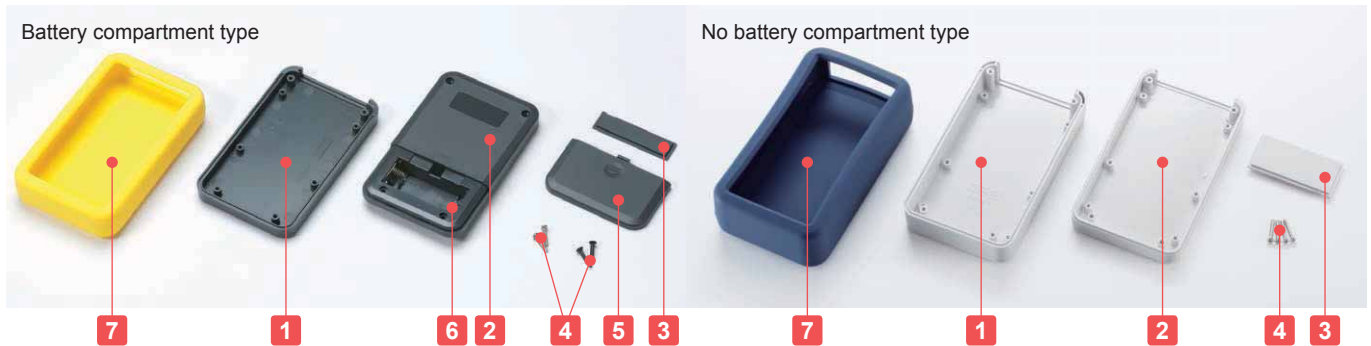
# LCS SERIES

# HAND-HELD CASE with SILICONE COVER



Technical Data
Protection class: IP40
Operating temperature: -10°C ~ +60°C

- Plastic case with silicone cover providing not only comfortable and anti-slip grip, but also protection from drop impact.
- Manufactured with flame-resistant ABS UL94V-0. Several battery compartment types are available.
- Positive (+) / negative (-) pole mark are incused on the inside of the battery compartments.
- Suitable for measuring instruments, test devices, wireless communication devices, medical devices and so on.



### Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS UL94V-0	Off-white • Dark gray
2	Bottom cover	1	ABS UL94V-0	Off-white • Dark gray
3	Panel	1	ABS UL94V-0	Off-white • Dark gray
4	Self tapping screw	4	Steel M2.6	Nickel plated • Black trivalent chromate
5	Battery cover	1	ABS UL94V-0	Off-white • Dark gray
6	Battery contact • Battery snap	1 set	Brass • Brass : PVC	Nickel plated • Nickel plated : Black
7	Silicone cover	1	Silicone	Red • Yellow • Green • Blue • Navy • Light gray • Dark gray

### Accessories (Optional parts)



Tapping standoff TPS series  
See page TPS • MT-1



PCB mounting screw EM-2.3  
See page EM • MR-1



TORX screw MR series  
See page EM • MR-1

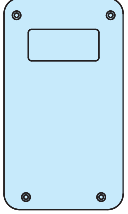
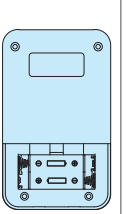
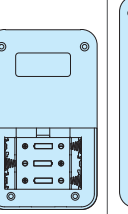
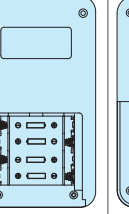
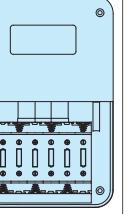
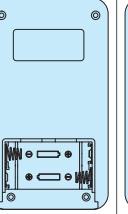
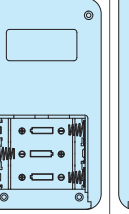
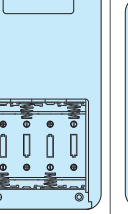
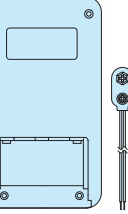


Key ring CR-20  
See page STP • CR-1



Strap STP series  
See page STP • CR-1

Battery Compartment Type

Type	N None	F2 AAA x 2	F3 AAA x 3	F4 AAA x 4	F6 AAA x 6	M2 AA x 2	M3 AA x 3	M4 AA x 4	9V 9V x 1
Battery compartment									

Color Type

Code	D/R Dark gray / Red	D/Y Dark gray / Yellow	D/G Dark gray / Green	D/B Dark gray / Blue	D/N Dark gray / Navy	D/D Dark gray / Dark gray	D/L Dark gray / Light gray
Color							
Code	W/R Off-white / Red	W/Y Off-white / Yellow	W/G Off-white / Green	W/B Off-white / Blue	W/N Off-white / Navy	W/D Off-white / Dark gray	W/L Off-white / Light gray
Color							

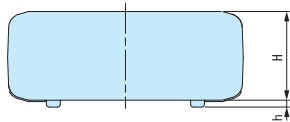
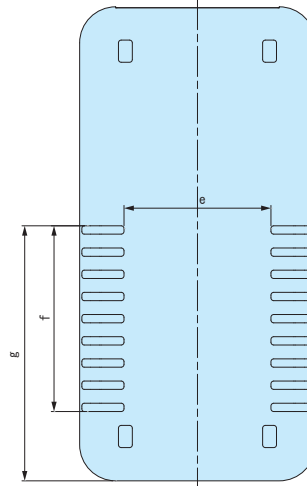
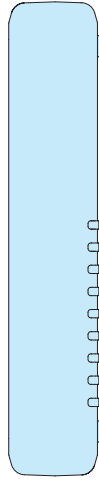
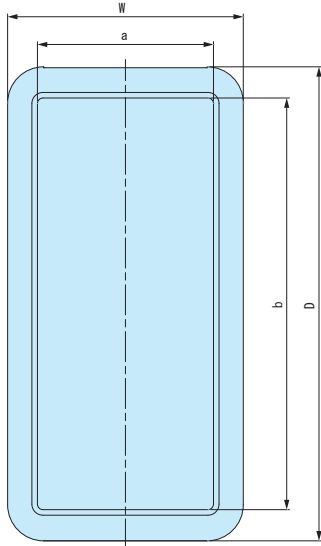
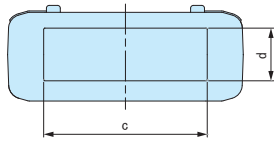
Product no. / Dimensions

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

Product no.	W	H	D	Battery compartment	Weight (g)
LCS115 -N -□□	74(69)	24(19.5)	120(115)	None	113
LCS115 -F2 -□□	74(69)	24(19.5)	120(115)	AAA x 2	117.5
LCS115 -F3 -□□	74(69)	24(19.5)	120(115)	AAA x 3	119.5
LCS115H -N -□□	74(69)	32.5(28)	120(115)	None	130
LCS115H -F2 -□□	74(69)	32.5(28)	120(115)	AAA x 2	134.5
LCS115H -F3 -□□	74(69)	32.5(28)	120(115)	AAA x 3	136
LCS115H -M2 -□□	74(69)	32.5(28)	120(115)	AA x 2	138.5
LCS115H -9V -□□	74(69)	32.5(28)	120(115)	9V x 1	138
LCS135 -N -□□	81(76)	32(27)	141(135)	None	165
LCS135 -F4 -□□	81(76)	32(27)	141(135)	AAA x 4	180
LCS135 -M2 -□□	81(76)	32(27)	141(135)	AA x 2	178
LCS135 -M3 -□□	81(76)	32(27)	141(135)	AA x 3	183.5
LCS135 -9V -□□	81(76)	32(27)	141(135)	9V x 1	181.5
LCS135H -N -□□	81(76)	40(35)	141(135)	None	183
LCS135H -F4 -□□	81(76)	40(35)	141(135)	AAA x 4	197.5
LCS135H -M2 -□□	81(76)	40(35)	141(135)	AA x 2	196.5
LCS135H -M3 -□□	81(76)	40(35)	141(135)	AA x 3	201.5
LCS135H -9V -□□	81(76)	40(35)	141(135)	9V x 1	199
LCS145S -N -□□	101(96)	25(20)	151(145)	None	183.4
LCS145S -F6 -□□	101(96)	25(20)	151(145)	AAA x 6	203.4
LCS145 -N -□□	101(96)	32(27)	151(145)	None	202
LCS145 -F6 -□□	101(96)	32(27)	151(145)	AAA x 6	222
LCS145 -M2 -□□	101(96)	32(27)	151(145)	AA x 2	216
LCS145 -M4 -□□	101(96)	32(27)	151(145)	AA x 4	223
LCS145H -N -□□	101(96)	40(35)	151(145)	None	224
LCS145H -F6 -□□	101(96)	40(35)	151(145)	AAA x 6	244.5
LCS145H -M2 -□□	101(96)	40(35)	151(145)	AA x 2	238
LCS145H -M4 -□□	101(96)	40(35)	151(145)	AA x 4	245
LCS165 -N -□□	85(80)	32(27)	171(165)	None	203
LCS165 -M4 -□□	85(80)	32(27)	171(165)	AA x 4	222.5
LCS165H -N -□□	85(80)	40(35)	171(165)	None	220.5
LCS165H -M4 -□□	85(80)	40(35)	171(165)	AA x 4	239.5

■ ( ) value = enclosure dimension.

**Silicone cover dimensions**

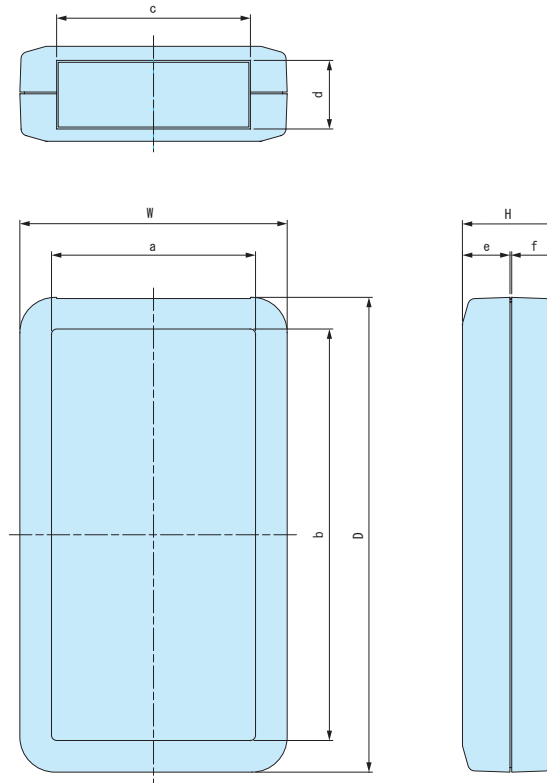


- Drawings below are reference examples only. DXF/DWG/PDF drawings available on our website.
- Refer to page LCT · LCS · LC · LCE-5 ~ LCT · LCS · LC · LCE-8 for detailed internal enclosure dimensions.

Product no.	W	H	D	a	b	c	d	e	f	g	h
LCS115 -N -□□	74	24	120	55.5	101.5	48.3	12	46	44.5	60.5	2
LCS115 -F2 -□□	74	24	120	55.5	101.5	48.3	12	46	44.5	60.5	2
LCS115 -F3 -□□	74	24	120	55.5	101.5	48.3	12	46	44.5	60.5	2
LCS115H -N -□□	74	32.5	120	55.5	101.5	48.3	20.5	46	44.5	60.5	2
LCS115H -F2 -□□	74	32.5	120	55.5	101.5	48.3	20.5	46	44.5	60.5	2
LCS115H -F3 -□□	74	32.5	120	55.5	101.5	48.3	20.5	46	44.5	60.5	2
LCS115H -M2 -□□	74	32.5	120	55.5	101.5	48.3	20.5	46	44.5	60.5	2
LCS115H -9V -□□	74	32.5	120	55.5	101.5	48.3	20.5	46	44.5	60.5	2
LCS135 -N -□□	81	32	141	59.5	118.5	55	19	53	59	79	2.5
LCS135 -F4 -□□	81	32	141	59.5	118.5	55	19	53	59	79	2.5
LCS135 -M2 -□□	81	32	141	59.5	118.5	55	19	53	59	79	2.5
LCS135 -M3 -□□	81	32	141	59.5	118.5	55	19	53	59	79	2.5
LCS135 -9V -□□	81	32	141	59.5	118.5	55	19	53	59	79	2.5
LCS135H -N -□□	81	40	141	59.5	118.5	55	27	53	59	79	2.5
LCS135H -F4 -□□	81	40	141	59.5	118.5	55	27	53	59	79	2.5
LCS135H -M2 -□□	81	40	141	59.5	118.5	55	27	53	59	79	2.5
LCS135H -M3 -□□	81	40	141	59.5	118.5	55	27	53	59	79	2.5
LCS135H -9V -□□	81	40	141	59.5	118.5	55	27	53	59	79	2.5
LCS145S -N -□□	101	25	151	76.5	125.5	71	12	71	59	81	2.5
LCS145S -F6 -□□	101	25	151	76.5	125.5	71	12	71	59	81	2.5
LCS145 -N -□□	101	32	151	76.5	125.5	71	19	71	59	81	2.5
LCS145 -F6 -□□	101	32	151	76.5	125.5	71	19	71	59	81	2.5
LCS145 -M2 -□□	101	32	151	76.5	125.5	71	19	71	59	81	2.5
LCS145 -M4 -□□	101	32	151	76.5	125.5	71	19	71	59	81	2.5
LCS145H -N -□□	101	40	151	76.5	125.5	71	27	71	59	81	2.5
LCS145H -F6 -□□	101	40	151	76.5	125.5	71	27	71	59	81	2.5
LCS145H -M2 -□□	101	40	151	76.5	125.5	71	27	71	59	81	2.5
LCS145H -M4 -□□	101	40	151	76.5	125.5	71	27	71	59	81	2.5
LCS165 -N -□□	85	32	171	63.5	148.5	59	19	53	67	92	2.5
LCS165 -M4 -□□	85	32	171	63.5	148.5	59	19	53	67	92	2.5
LCS165H -N -□□	85	40	171	63.5	148.5	59	27	53	67	92	2.5
LCS165H -M4 -□□	85	40	171	63.5	148.5	59	27	53	67	92	2.5

Enclosure dimensions

- Drawings below are reference examples only.  
DXF/DWG/PDF drawings available on our website.
- Refer to page LCT · LCS · LC · LCE-5 ~ LCT · LCS · LC · LCE-8 for detailed internal enclosure dimensions.



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

Product no.	W	H	D	a	b	c	d	e	f	Battery compartment
LCS115 -N -□□	69	19.5	115	54	100	48.1	12	10	9	None
LCS115 -F2 -□□	69	19.5	115	54	100	48.1	12	10	9	AAA x 2
LCS115 -F3 -□□	69	19.5	115	54	100	48.1	12	10	9	AAA x 3
LCS115H-N -□□	69	28	115	54	100	48.1	20.5	18.5	9	None
LCS115H-F2 -□□	69	28	115	54	100	48.1	20.5	18.5	9	AAA x 2
LCS115H-F3 -□□	69	28	115	54	100	48.1	20.5	18.5	9	AAA x 3
LCS115H-M2-□□	69	28	115	54	100	48.1	20.5	18.5	9	AA x 2
LCS115H-9V -□□	69	28	115	54	100	48.1	20.5	18.5	9	9V x 1
LCS135 -N -□□	76	27	135	58	117	55.1	19.5	13.5	13	None
LCS135 -F4 -□□	76	27	135	58	117	55.1	19.5	13.5	13	AAA x 4
LCS135 -M2-□□	76	27	135	58	117	55.1	19.5	13.5	13	AA x 2
LCS135 -M3-□□	76	27	135	58	117	55.1	19.5	13.5	13	AA x 3
LCS135 -9V -□□	76	27	135	58	117	55.1	19.5	13.5	13	9V x 1
LCS135H-N -□□	76	35	135	58	117	55.1	27.5	21.5	13	None
LCS135H-F4 -□□	76	35	135	58	117	55.1	27.5	21.5	13	AAA x 4
LCS135H-M2-□□	76	35	135	58	117	55.1	27.5	21.5	13	AA x 2
LCS135H-M3-□□	76	35	135	58	117	55.1	27.5	21.5	13	AA x 3
LCS135H-9V -□□	76	35	135	58	117	55.1	27.5	21.5	13	9V x 1
LCS145S-N -□□	96	20	145	75	124	71.1	12.5	7.5	12	None
LCS145S-F6 -□□	96	20	145	75	124	71.1	12.5	7.5	12	AAA x 6
LCS145 -N -□□	96	27	145	75	124	71.1	19.5	14.5	12	None
LCS145 -F6 -□□	96	27	145	75	124	71.1	19.5	14.5	12	AAA x 6
LCS145 -M2-□□	96	27	145	75	124	71.1	19.5	14.5	12	AA x 2
LCS145 -M4-□□	96	27	145	75	124	71.1	19.5	14.5	12	AA x 4
LCS145H-N -□□	96	35	145	75	124	71.1	27.5	22.5	12	None
LCS145H-F6 -□□	96	35	145	75	124	71.1	27.5	22.5	12	AAA x 6
LCS145H-M2-□□	96	35	145	75	124	71.1	27.5	22.5	12	AA x 2
LCS145H-M4-□□	96	35	145	75	124	71.1	27.5	22.5	12	AA x 4
LCS165 -N -□□	80	27	165	62	147	59.1	19.5	13.5	13	None
LCS165 -M4-□□	80	27	165	62	147	59.1	19.5	13.5	13	AA x 4
LCS165H-N -□□	80	35	165	62	147	59.1	27.5	21.5	13	None
LCS165H-M4-□□	80	35	165	62	147	59.1	27.5	21.5	13	AA x 4





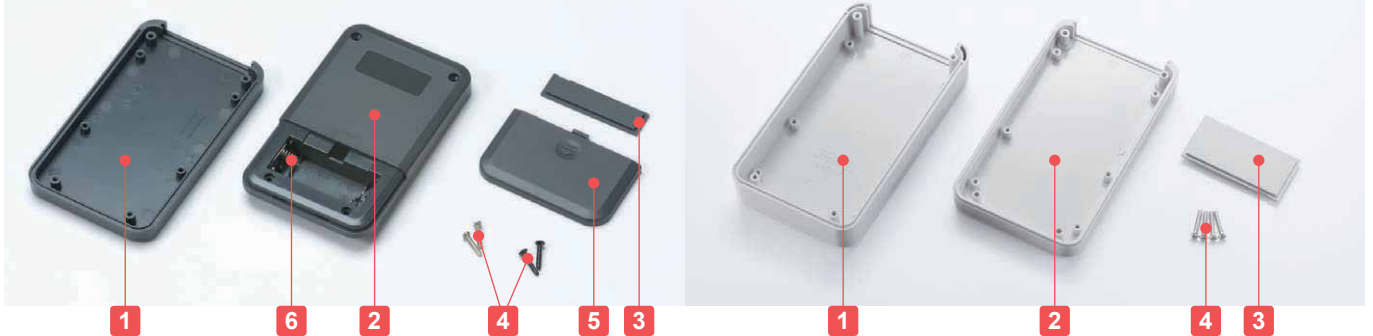
Technical Data

Protection class: IP40  
 Operating temperature: -10°C ~ +60°C

- Designed with beveled edges and rounded corners, and manufactured from flame-retardant ABS UL94V-0 material.
- Available in 9 different compartment types: AAx2, AAx3, AAx4, AAAx2, AAAx3, AAAx4, AAAx6, 9Vx1, and no battery compartment type.
- Positive (+) / negative (-) pole mark are incused within each battery compartment.
- Recommended to be used as measurement instruments, testing devices, wireless communication gadgets, medical equipment, and so on.

Battery compartment type

No battery compartment type



Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS UL94V-0	Off-white • Dark gray
2	Bottom cover	1	ABS UL94V-0	Off-white • Dark gray
3	Panel	1	ABS UL94V-0	Off-white • Dark gray
4	Self tapping screw	4	Steel M2.6	Nickel plated • Black trivalent chromate
5	Battery cover	1	ABS UL94V-0	Off-white • Dark gray
6	Battery contact • Battery snap	1 set	Brass • Brass : PVC	Nickel plated • Nickel plated : Black

Accessories (Optional parts)



Tapping standoff TPS series  
 See page TPS • MT-1



PCB mounting screw EM-2.3  
 See page EM • MR-1



TORX screw MR series  
 See page EM • MR-1



Key ring • Strap CR-20 • STP series  
 See STP • CR-1

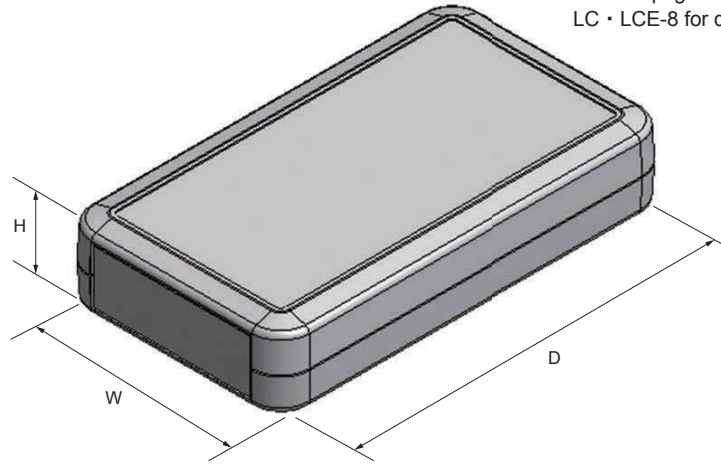


Suspension bracket WM series  
 See page WM-1



Neodymium magnet NMG series  
 See page NMG-1

- Drawings below are reference examples only.  
DXF/DWG/PDF drawings available on our website.
- Refer to page LCT · LCS · LC · LCE-5 ~ LCT · LCS · LC · LCE-8 for detailed internal enclosure dimensions.



**Battery Compartment Type**

Type	N None	F2 AAAx2	F3 AAAx3	F4 AAAx4	F6 AAAx6	M2 AAx2	M3 AAx3	M4 AAx4	9V 9Vx1
Battery compartment									

**Product no. / Dimensions**

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

Product no.		W	H	D	a	b	c	d	e	f	Battery compartment	Weight (g)
● Dark gray	● Off-white											
LC115 -N -D	LC115 -N -W	69	19.5	115	54	100	48.1	12	10	9	None	70
LC115 -F2 -D	LC115 -F2 -W	69	19.5	115	54	100	48.1	12	10	9	AAA x 2	74.5
LC115 -F3 -D	LC115 -F3 -W	69	19.5	115	54	100	48.1	12	10	9	AAA x 3	76.5
LC115H -N -D	LC115H -N -W	69	28	115	54	100	48.1	20.5	18.5	9	None	80
LC115H -F2 -D	LC115H -F2 -W	69	28	115	54	100	48.1	20.5	18.5	9	AAA x 2	84.5
LC115H -F3 -D	LC115H -F3 -W	69	28	115	54	100	48.1	20.5	18.5	9	AAA x 3	86
LC115H -M2 -D	LC115H -M2 -W	69	28	115	54	100	48.1	20.5	18.5	9	AA x 2	88.5
LC115H -9V -D	LC115H -9V -W	69	28	115	54	100	48.1	20.5	18.5	9	9V x 1	88
LC135 -N -D	LC135 -N -W	76	27	135	58	117	55.1	19.5	13.5	13	None	95
LC135 -F4 -D	LC135 -F4 -W	76	27	135	58	117	55.1	19.5	13.5	13	AAA x 4	110
LC135 -M2 -D	LC135 -M2 -W	76	27	135	58	117	55.1	19.5	13.5	13	AA x 2	108
LC135 -M3 -D	LC135 -M3 -W	76	27	135	58	117	55.1	19.5	13.5	13	AA x 3	113.5
LC135 -9V -D	LC135 -9V -W	76	27	135	58	117	55.1	19.5	13.5	13	9V x 1	111.5
LC135H -N -D	LC135H -N -W	76	35	135	58	117	55.1	27.5	21.5	13	None	107.5
LC135H -F4 -D	LC135H -F4 -W	76	35	135	58	117	55.1	27.5	21.5	13	AAA x 4	122
LC135H -M2 -D	LC135H -M2 -W	76	35	135	58	117	55.1	27.5	21.5	13	AA x 2	121
LC135H -M3 -D	LC135H -M3 -W	76	35	135	58	117	55.1	27.5	21.5	13	AA x 3	126
LC135H -9V -D	LC135H -9V -W	76	35	135	58	117	55.1	27.5	21.5	13	9V x 1	123.5
LC145S -N -D	LC145S -N -W	96	20	145	75	124	71.1	12.5	7.5	12	None	110
LC145S -F6 -D	LC145S -F6 -W	96	20	145	75	124	71.1	12.5	7.5	12	AAA x 6	130
LC145 -N -D	LC145 -N -W	96	27	145	75	124	71.1	19.5	14.5	12	None	121
LC145 -F6 -D	LC145 -F6 -W	96	27	145	75	124	71.1	19.5	14.5	12	AAA x 6	141
LC145 -M2 -D	LC145 -M2 -W	96	27	145	75	124	71.1	19.5	14.5	12	AA x 2	135
LC145 -M4 -D	LC145 -M4 -W	96	27	145	75	124	71.1	19.5	14.5	12	AA x 4	142
LC145H -N -D	LC145H -N -W	96	35	145	75	124	71.1	27.5	22.5	12	None	135
LC145H -F6 -D	LC145H -F6 -W	96	35	145	75	124	71.1	27.5	22.5	12	AAA x 6	155.5
LC145H -M2 -D	LC145H -M2 -W	96	35	145	75	124	71.1	27.5	22.5	12	AA x 2	149
LC145H -M4 -D	LC145H -M4 -W	96	35	145	75	124	71.1	27.5	22.5	12	AA x 4	156
LC165 -N -D	LC165 -N -W	80	27	165	62	147	59.1	19.5	13.5	13	None	120.5
LC165 -M4 -D	LC165 -M4 -W	80	27	165	62	147	59.1	19.5	13.5	13	AA x 4	140
LC165H -N -D	LC165H -N -W	80	35	165	62	147	59.1	27.5	21.5	13	None	134.5
LC165H -M4 -D	LC165H -M4 -W	80	35	165	62	147	59.1	27.5	21.5	13	AA x 4	153.5



EMC Shielding Effects



Technical Data
Protection class: IP40
Operating temperature: -10°C ~ +60°C

- LCE series is an EMC shielded version of LC hand-held plastic case coated internally with DOTITE conductive paint (acrylic paint mixed with nickel filler).
- Designed with beveled edges and rounded corners, and manufactured from flame-resistant ABS UL94V-0 material.
- Recommended to be used as measurement instruments, testing devices, wireless communication gadgets, medical equipment, and so on.

Components

No.	Part name	Pcs	Material	Color / Finish	Conductive paint
1	Top cover	1	ABS UL94V-0	Dark gray	DOTITE
2	Bottom cover	1	ABS UL94V-0	Dark gray	DOTITE
3	Panel	1	ABS UL94V-0	Dark gray	DOTITE
4	Self-tapping screw	4	Steel M2.6	Black trivalent chromate	—

Accessories (Optional parts)



Silicone cover LCTP • LCSC series  
See page LCTP-1 ~ LCSC-1



Tapping standoff TPS series  
See page TPS • MT-1



PCB mounting screw EM-2.3  
See page EM • MR-1



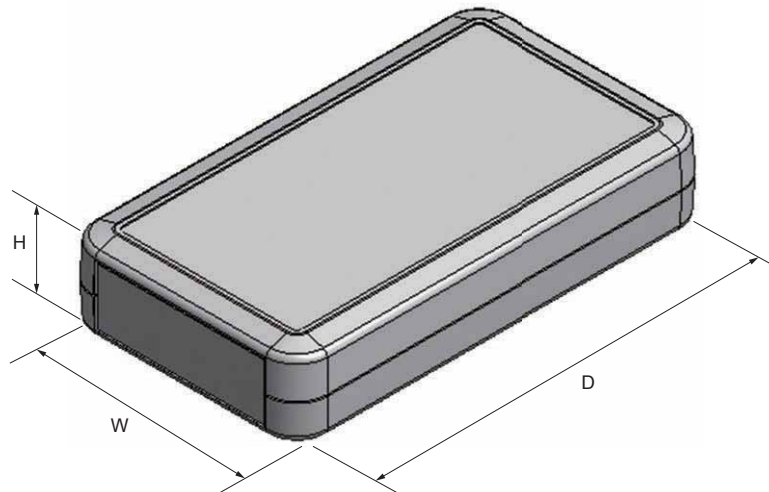
TORX screw MR series  
See page EM • MR-1



Suspension bracket WM series  
See page WM-1

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

■ Refer to page LCT · LCS · LC · LCE-5 ~ LCT · LCS · LC · LCE-8 for detailed internal enclosure dimensions.



**Product no. / Dimensions**

	Product no.	W	H	D	Included screws	Weight (g)
<b>NEW</b>	LCE115 -N -D	69	19.5	115	Countersunk M2.6-14 x 4 pcs	72.5
<b>NEW</b>	LCE115H -N -D	69	28	115	Countersunk M2.6-18 x 4 pcs	84
<b>NEW</b>	LCE135 -N -D	76	27	135	Countersunk M2.6-18 x 4 pcs	97
<b>NEW</b>	LCE145H -N -D	96	35	145	Countersunk M2.6-18 x 4 pcs	137
<b>NEW</b>	LCE165H -N -D	80	35	165	Countersunk M2.6-18 x 4 pcs	139

**CONDUCTIVE PAINT CUSTOMIZATION AVAILABLE for LC series.**

The LCE series are a selected few models of the LC series, customized with conductive paint.  
Other LC series enclosures not listed can also be customized with conductive paint.

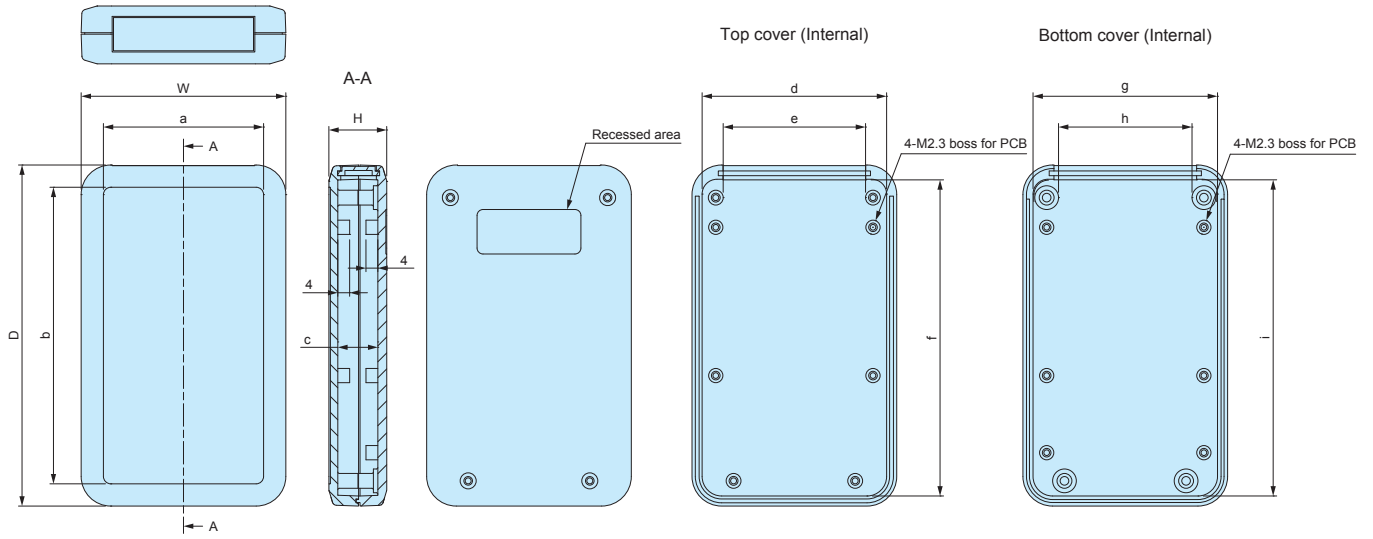
Contact us for more details.  
E-mail : [sales@takachi-el.co.jp](mailto:sales@takachi-el.co.jp)



**LCT • LCS (Case only) / LC • LCE Dimensions**

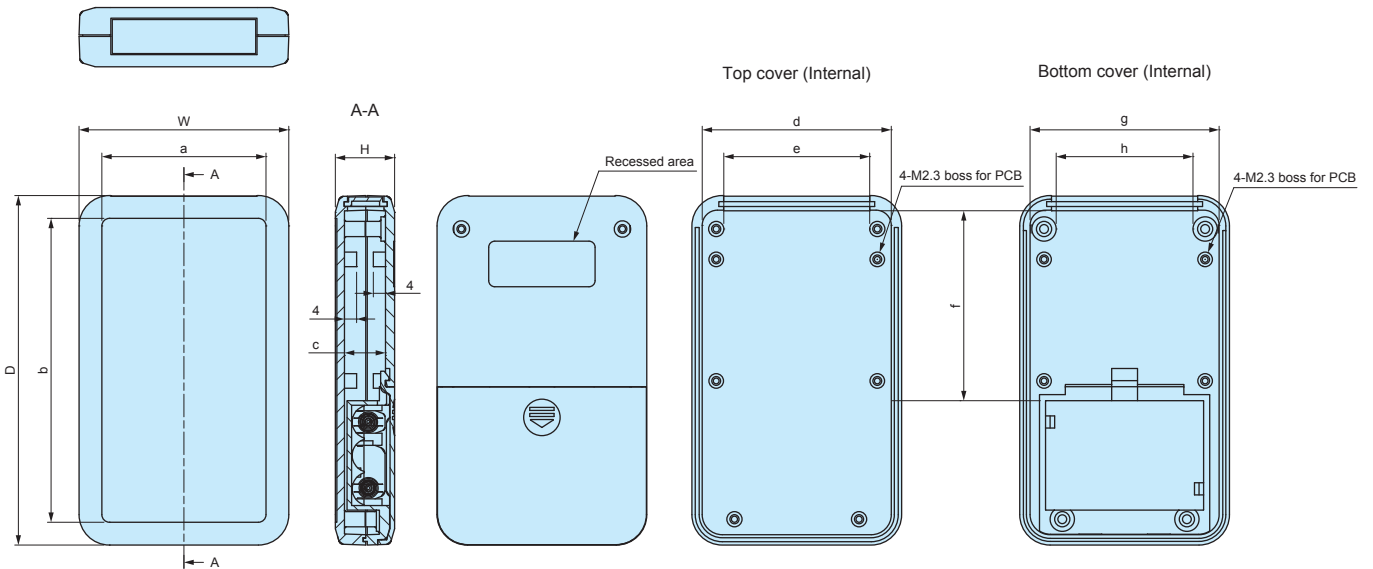
■ Drawings below are reference examples only.  
DXF/DWG/PDF drawings available on our website.

LC / LCE / LCS / LCT115-N  
LC / LCE / LCS / LCT115H-N



Product no.	W	H	D	a	b	c	d	e	f	g	h	i
LC • LCE • LCS • LCT115 -N	69	19.5	115	54	100	13.5	61.5	47	106.1	61.6	44	106.1
LC • LCE • LCS • LCT115H-N	69	28	115	54	100	22	60.9	47	105.5	61.5	44	106.1

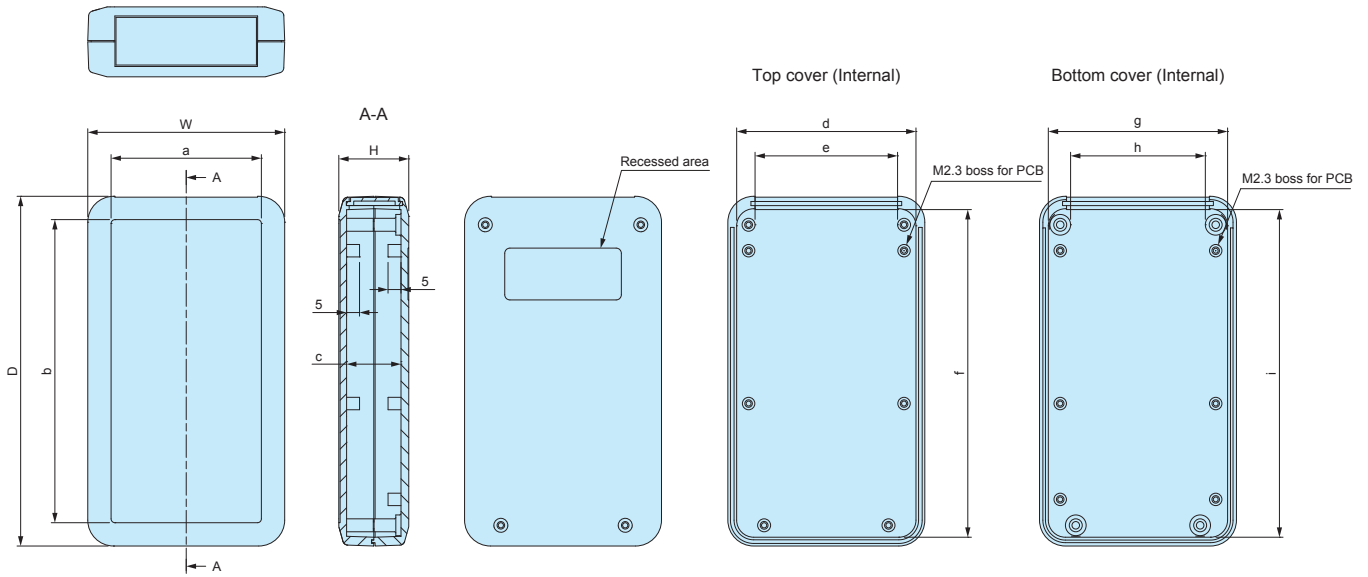
LC / LCS / LCT115-F2 • LC / LCS / LCT115H-F2  
LC / LCS / LCT115-F3 • LC / LCS / LCT115H-F3  
LC / LCS / LCT115H-M2 • LC / LCS / LCT115H-9V



Product no.	W	H	D	a	b	c	d	e	f	g	h
LC • LCS • LCT115 -F2	69	19.5	115	54	100	13.5	61.5	47	73.3	61.6	44
LC • LCS • LCT115 -F3	69	19.5	115	54	100	13.5	61.5	47	62.3	61.6	44
LC • LCS • LCT115H-F2	69	28	115	54	100	22	60.9	47	73.3	61.6	44
LC • LCS • LCT115H-F3	69	28	115	54	100	22	60.9	47	62.3	61.6	44
LC • LCS • LCT115H-M2	69	28	115	54	100	22	60.9	47	65.1	61.6	44
LC • LCS • LCT115H-9V	69	28	115	54	100	22	60.9	47	66	61.6	44

LC / LCE / LCS / LCT135-N  
LC / LCS / LCT135H-N

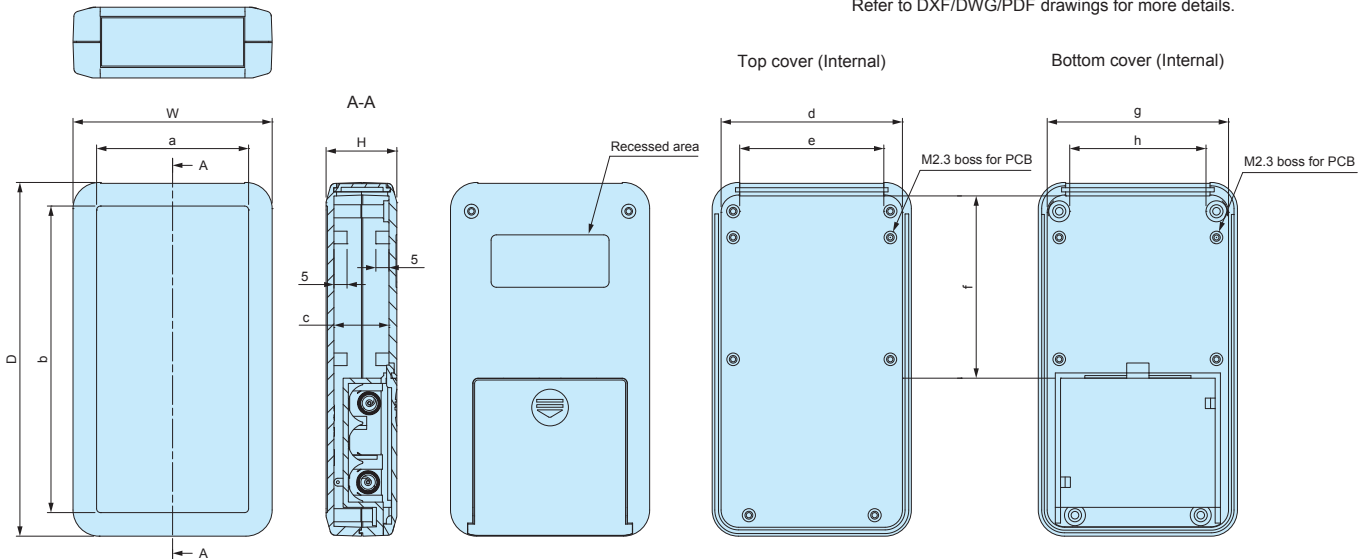
※ Number of PCB bosses vary by model.  
Refer to DXF/DWG/PDF drawings for more details.



Product no.	W	H	D	a	b	c	d	e	f	g	h	i
LC • LCE • LCS • LCT135-N	76	27	135	58	117	21	68.2	55	125.8	68.3	51	125.9
LC • LCS • LCT135H-N	76	35	135	58	117	29	67.7	54	125.3	68.3	51	125.9

LC / LCS / LCT135-F4 • LC / LCS / LCT135H-F4 • LC / LCS / LCT135-M2 • LC / LCS / LCT135H-M2  
LC / LCS / LCT135-M3 • LC / LCS / LCT135H-M3 • LC / LCS / LCT135-9V • LC / LCS / LCT135H-9V

※ Number of PCB bosses vary by model.  
Refer to DXF/DWG/PDF drawings for more details.

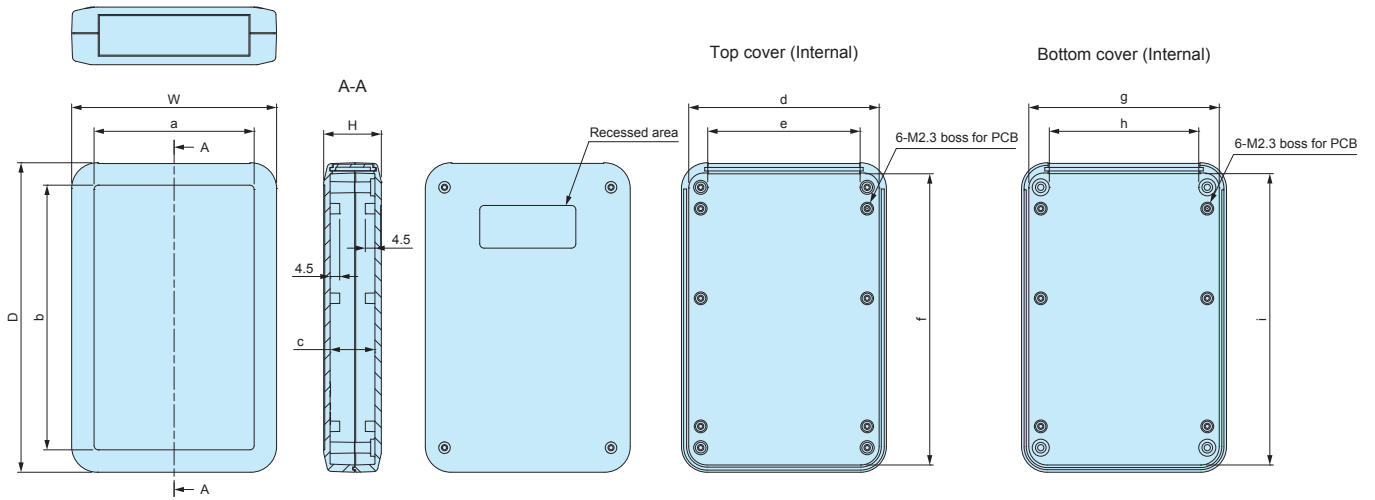


Product no.	W	H	D	a	b	c	d	e	f	g	h
LC • LCS • LCT135 -F4	76	27	135	58	117	21	68.2	55	69.4	68.3	51
LC • LCS • LCT135 -M2	76	27	135	58	117	21	68.2	55	84.5	68.3	51
LC • LCS • LCT135 -M3	76	27	135	58	117	21	68.2	55	69.4	68.3	51
LC • LCS • LCT135 -9V	76	27	135	58	117	21	68.2	55	84.5	68.3	51
LC • LCS • LCT135H-F4	76	35	135	58	117	29	67.7	54	69.4	68.3	51
LC • LCS • LCT135H-M2	76	35	135	58	117	29	67.7	54	84.5	68.3	51
LC • LCS • LCT135H-M3	76	35	135	58	117	29	67.7	54	69.4	68.3	51
LC • LCS • LCT135H-9V	76	35	135	58	117	29	67.7	54	84.5	68.3	51

**LCT • LCS (Case only) / LC • LCE Dimensions**

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

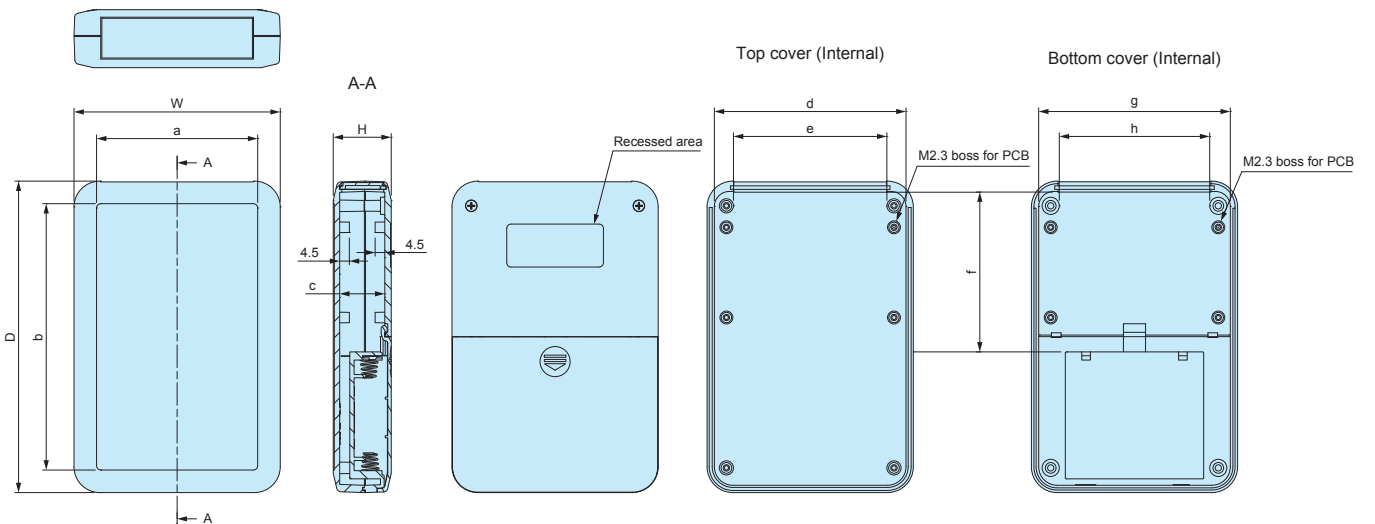
LC / LCS / LCT145S-N  
LC / LCS / LCT145-N  
LC / LCE / LCS / LCT145H-N



Product no.	W	H	D	a	b	c	d	e	f	g	h	i
LC • LCS • LCT145S-N	96	20	145	75	124	14	88.3	71.4	135.9	87.9	68.9	135.5
LC • LCS • LCT145 -N	96	27	145	75	124	21	87.8	71.4	135.4	87.9	68.9	135.5
LC • LCE • LCS • LCT145H-N	96	35	145	75	124	29	87.2	71	134.8	87.9	68.9	135.5

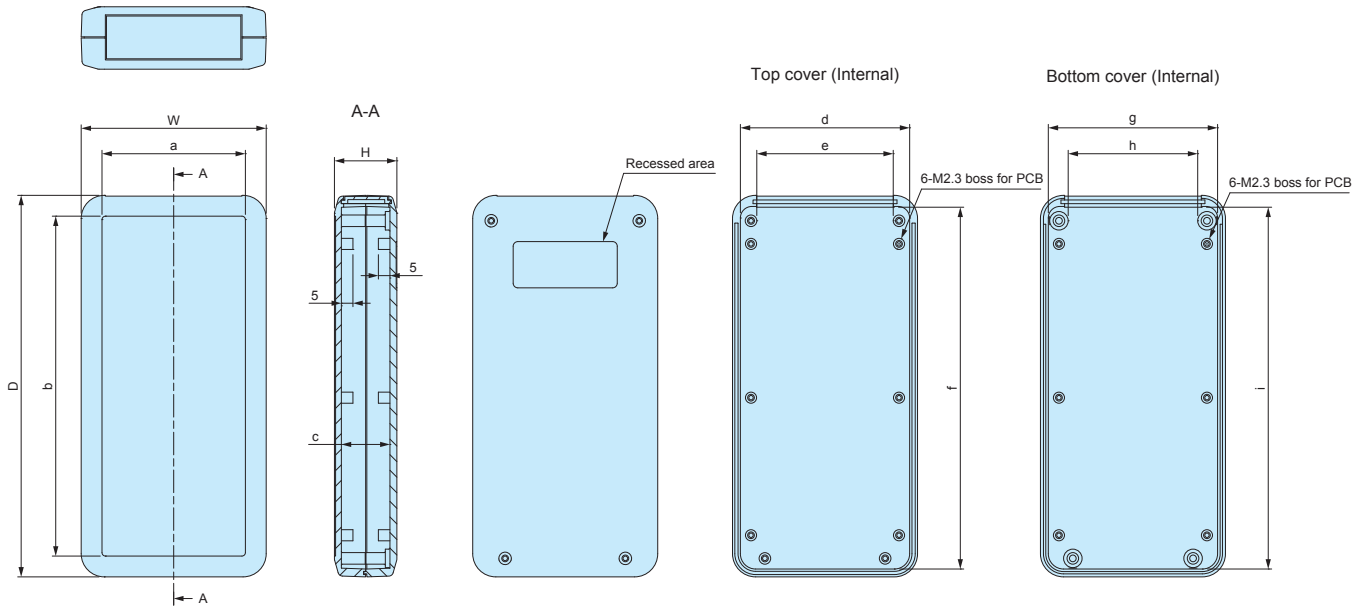
LC / LCS / LCT145S-F6 • LC / LCS / LCT145-F6 • LC / LCS / LCT145H-F6  
LC / LCS / LCT145-M2 • LC / LCS / LCT145H-M2  
LC / LCS / LCT145-M4 • LC / LCS / LCT145H-M4

※ Number of PCB bosses vary by model.  
Refer to DXF/DWG/PDF drawings for more details.



Product no.	W	H	D	a	b	c	d	e	f	g	h
LC • LCS • LCT145S -F6	96	20	145	75	124	14	88.3	71.4	78.4	87.9	68.9
LC • LCS • LCT145 -F6	96	27	145	75	124	21	87.8	71.4	78.4	87.9	68.9
LC • LCS • LCT145 -M2	96	27	145	75	124	21	87.8	71.4	97.4	87.9	68.9
LC • LCS • LCT145 -M4	96	27	145	75	124	21	87.8	71.4	74	87.9	68.9
LC • LCS • LCT145H -F6	96	35	145	75	124	29	87.2	71	78.4	87.9	68.9
LC • LCS • LCT145H-M2	96	35	145	75	124	29	87.2	71	97.4	87.9	68.9
LC • LCS • LCT145H-M4	96	35	145	75	124	29	87.2	71	74	87.9	68.9

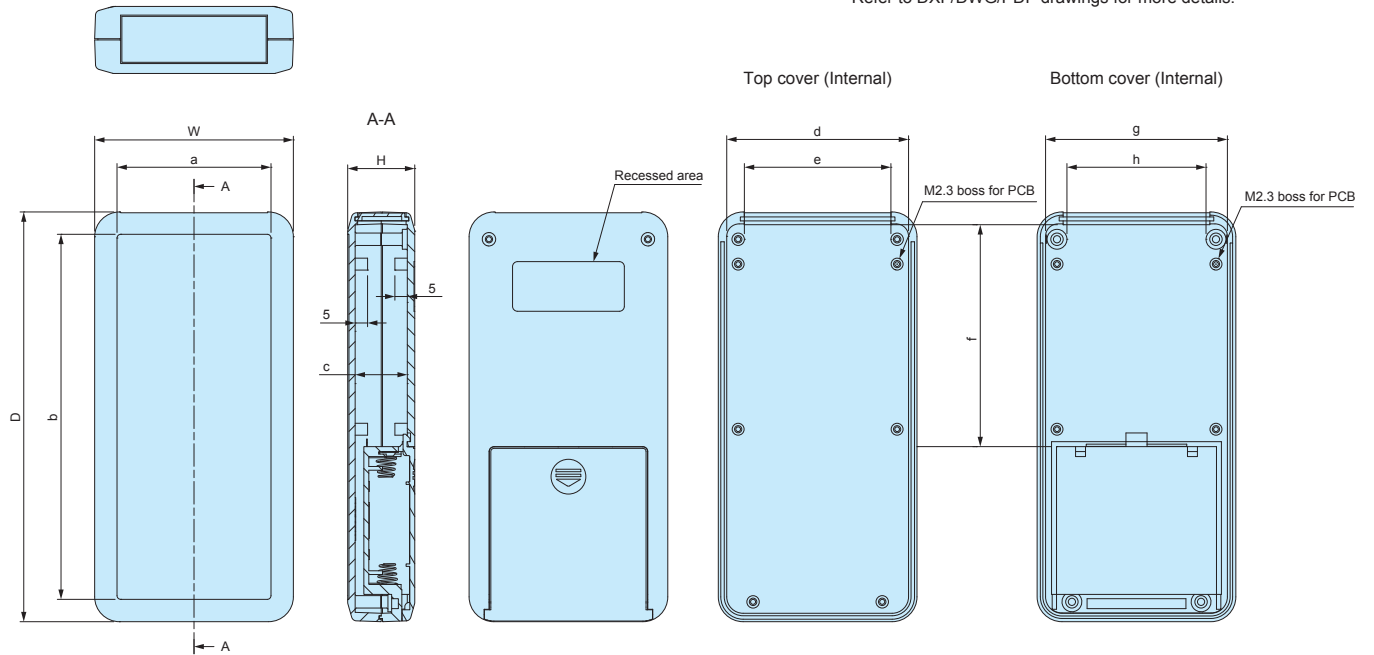
LC / LCS / LCT165-N  
LC / LCE / LCS / LCT165H-N



Product no.	W	H	D	a	b	c	d	e	f	g	h	i
LC • LCS • LCT165-N	80	27	165	62	147	21	72.2	58	155.8	72.3	55	155.9
LC • LCE • LCS • LCT165H-N	80	35	165	62	147	29	71.7	58	155.3	72.3	55	155.9

LC / LCS / LCT165-M4  
LC / LCS / LCT165H-M4

※ Number of PCB bosses vary by model.  
Refer to DXF/DWG/PDF drawings for more details.



Product no.	W	H	D	a	b	c	d	e	f	g	h
LC • LCS • LCT165 -M4	80	27	165	62	147	21	72.2	58	89.2	72.3	55
LC • LCS • LCT165H-M4	80	35	165	62	147	29	71.7	58	89.2	72.3	55



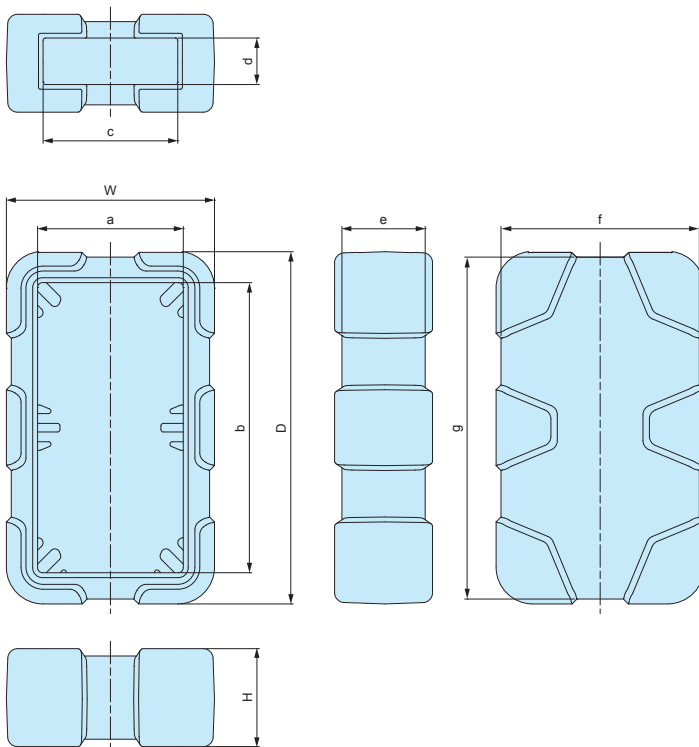
# LCTP SERIES

# SHOCK-PROOF SILICONE COVER

## Color Type



- Shock-proof silicone cover for LC series. New sizes now available!
- Custom color is available from 500pcs per order batch. For custom color order, please specify **PANTONE®**, RGB color number or provide your sample color.
- Drawings below are reference examples only. DXF/DWG/PDF drawings available on our website.



## APPLICATION EXAMPLE

**ULTRASONIC HARDNESS TESTER**  
Product by NOVOTEST (Ukraine)



## Components

Part name	Material	Color
Silicone cover	Silicone	Orange • Green • Navy • Dark gray • Light gray

## Product no. / Dimensions

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

Product no.	W	H	D	a	b	c	d	e	f	g	Suitable case	Weight (g)
LCTP115 -□	76	28	121.9	55.5	101.5	48.3	12	24	72	117.8	LC115	53.5
LCTP115H -□	76	36.5	121.9	55.5	101.5	48.3	20.5	32.5	72	117.8	LC115H	61
LCTP135 -□	85	40	143.9	59.5	118.5	55	19	34	81	139.7	LC135	115.5
LCTP135H -□	85	48	143.9	59.5	118.5	55	27	42	81	139.6	LC135H	124
LCTP145S -□	105	33	153.9	76.5	125.5	71	12	27	101	149.9	LC145S	129.1
LCTP145 -□	105	40	153.9	76.5	125.5	71	19	34	101	149.7	LC145	137.5
LCTP145H -□	105	48	153.9	76.5	125.5	71	27	42	101	149.7	LC145H	147
LCTP165 -□	89	40	173.9	63.5	148.5	59	19	34	85	169.7	LC165	143
LCTP165H -□	89	48	173.9	63.5	148.5	59	27	42	85	169.6	LC165H	151.5

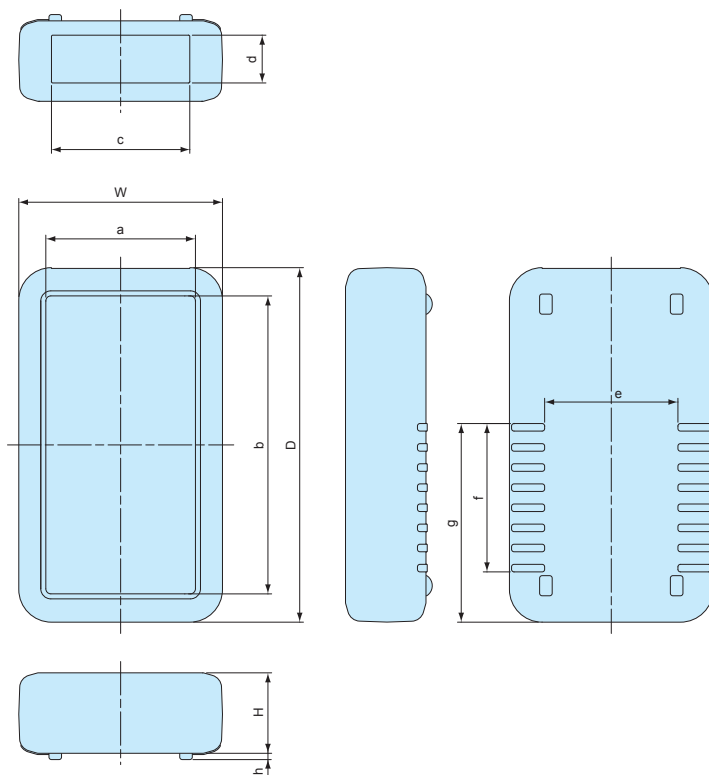
# LCSC SERIES

# SILICONE COVER

### Color Type

Code	[R] Red	[Y] Yellow	[G] Green	[B] Blue	[N] Navy	[D] Dark gray	[L] Light gray
Color							

- Silicone cover for LC Series.
- Custom color is available from 500pcs per order batch. For custom color order, please specify **PANTONE®**, RGB color number or provide your sample color.
- Drawings below are reference examples only. DXF/DWG/PDF drawings available on our website.



### APPLICATION EXAMPLE

#### TEMPERATURE SURVEILLANCE SENSOR

Product by SENFIO (Brazil)



### Components

Part name	Material	Color
Silicone cover	Silicone	Red • Yellow • Green • Blue • Navy • Dark gray • Light gray

### Product no. / Dimensions

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

Product no.	W	H	D	a	b	c	d	e	f	g	h	Suitable case	Weight (g)
LCSC115 -□	74	24	120	55.5	101.5	48.3	12	46	44.5	60.5	2	LC115	43
LCSC115H-□	74	32.5	120	55.5	101.5	48.3	20.5	46	44.5	60.5	2	LC115H	50
LCSC135 -□	81	32	141	59.5	118.5	55	19	53	59	79	2.5	LC135	70
LCSC135H-□	81	40	141	59.5	118.5	55	27	53	59	79	2.5	LC135H	75.5
LCSC145S-□	101	25	151	76.5	125.5	71	12	71	59	81	2.5	LC145S	73.4
LCSC145 -□	101	32	151	76.5	125.5	71	19	71	59	81	2.5	LC145	81
LCSC145H-□	101	40	151	76.5	125.5	71	27	71	59	81	2.5	LC145H	89
LCSC165 -□	85	32	171	63.5	148.5	59	19	53	67	92	2.5	LC165	82.5
LCSC165H-□	85	40	171	63.5	148.5	59	27	53	67	92	2.5	LC165H	86

# IP67 PORTABLE CASE WC SERIES



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

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

**IPx7 : No ingress of water when submerged up to a depth of 1 meter for 30 minutes**

## High waterproof performance with both TPE and silicone gasket

ABS and TPE double-shot molded top & bottom covers allows for a good waterproof seal.

The durable silicone gasket maintains the battery lid seal.

Insert nut and screw allow the battery compartment to remain durable even after repeated opening/closing.

## Great protection by TPE sides

Side grips in TPE material provides a comfortable grip and protection against drop impact.



## 3 color combinations available



# APPLICATION EXAMPLE

Best for outdoor use as a remote control, RFID tag, compact GPS, wireless device, simplified measurement gadget and so on.

## Structure AI Inspection Noise Detector System

Product by AIST (Japan)  
Website : [aist.go.jp](http://aist.go.jp)



## Emergency Call Receiver / Transmitter

Product by Knop Elektronik A/S (Denmark)  
Website : [knop.dk](http://knop.dk)



## GPS Transmit Trigger

Product by Tokyo Denki Gijyutsu Co., Ltd. (Japan)  
Website : [tdg-net.co.jp/](http://tdg-net.co.jp/)



## LPWA (Low Power, Wide Area) Transmitter



## We are able to manufacture embossed or standard overlay sheets with low initial costs.

Waterproof performance may be lost by drilling/milling holes or cut-outs for buttons or switches on waterproof enclosures. Use an IP rated overlay sheet, or membrane keypad in order to allow the milled area to remain waterproof.



- Advantage 1** Reduce initial cost with digital inkjet printing.
- Advantage 2** Reduce initial tooling cost for cutting die with digital cutting plotter.
- Advantage 3** Reduce initial tooling cost for embossing with in-house mold processing.
- Advantage 4** Shorter lead time made possible by having all production be in-house.



- Double shot injection molded TPE Grip and ABS Body.
- New AAA x 2 battery compartment model added. Case with a CR2032 coin battery, and no battery compartment types are also available. Solder battery contacts on PCB for CR2032 models.
- TPE side grip provides not only a comfortable grip, but also protects from drop impact.
- Suitable to be used as a remote controller, key fob, wireless device, RFID tag, and so on.
- See page WC-4 for coin battery contact installation step.

Technical Data
Protection class : IP67
Operating temperature : -10°C ~ +50°C
Recommended torque :
WC72 • WC90 : 0.06 ~ 0.08N • m
WC105 : 0.13 ~ 0.15N • m

WC72-□, WC90-□

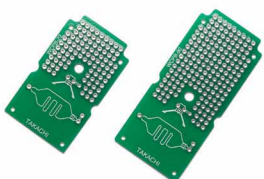
WC105-28



Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS UL94HB : Elastomer	Black & Black • Black & Marine • White & Light gray
2	Bottom Cover	1	ABS UL94HB : Elastomer	Black & Black • Black & Marine • White & Light gray
3	Battery lid	1	ABS UL94HB	Black • White
4	Battery contact	1 set	WC72 • WC90 : Stainless steel SUS304 WC105 : Brass • Hard steel wire	Nickel plated
5	O-ring	1	Silicone	Black
6	Screw	7	Stainless steel SUS304	Unfinished

Accessories (Optional parts)



Exclusive PCB WCPB series  
See page WCPB-1



Strap STPS series  
See page STPS-1

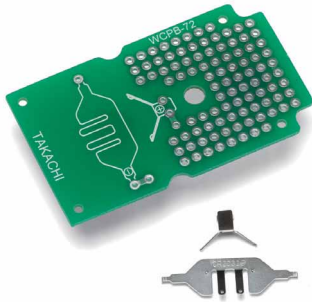


PCB mounting screw EM-1.6  
See page EM • MR-1



Neodymium magnet NMG series  
See page NMG-1

# Coin battery contact installation step



Solder the contacts onto the PCB



Install the PCB in the top cover

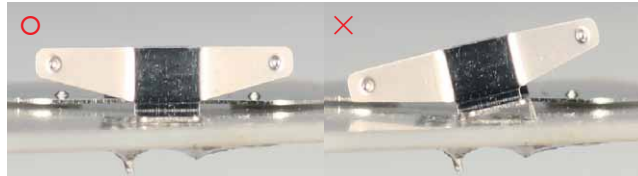


All set!

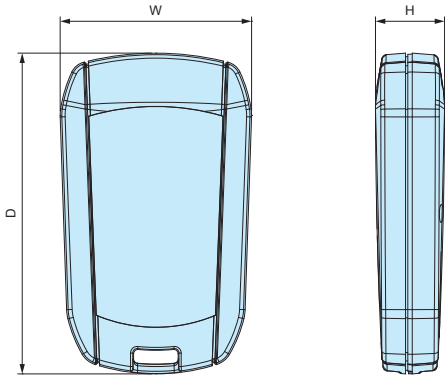
**CAUTION** ■ Use caution when mounting battery contacts.



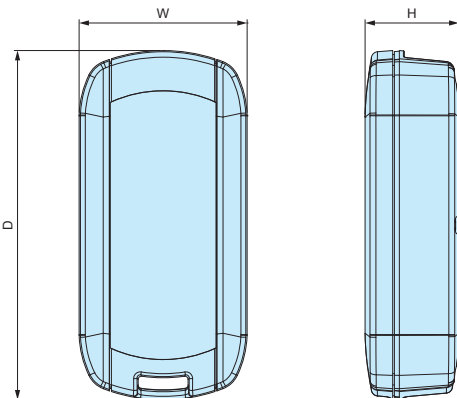
■ Battery direction is incused on the inner side of the battery lid.



WC72-□, WC90-□



WC105-28



## Battery Compartment Types

Type	N	C	F2
	None	CR2032 x 1	AAA x 2
Battery Compartment			

## Color Type

Code	B B	B M	W L
Body	Black	Black	White
Grip	Black	Marine	Light gray
Color			

Product no. / Dimensions

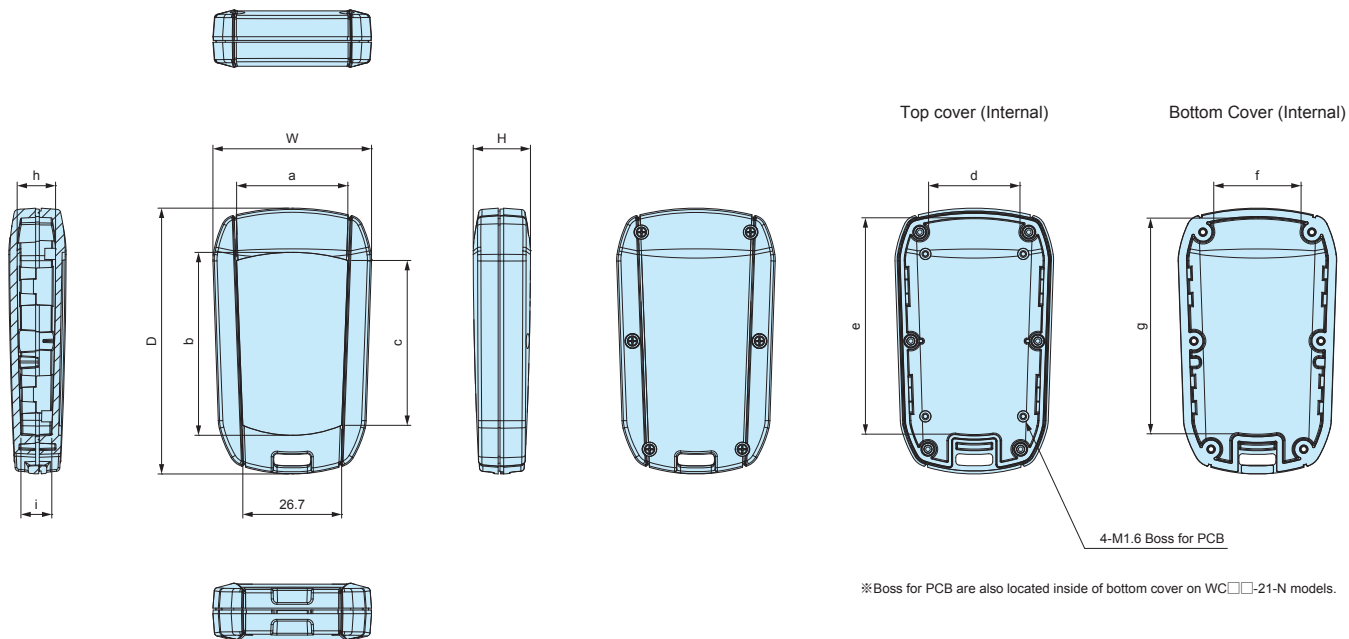
■ Please suffix color code at the end of the product number.

Product no.	W	H	D	Battery Compartment	Weight(g)
WC 72-15-N -□□	43	15.5	72	None	18.5
WC 72-15-C -□□	43	15.5	72	CR2032	22
WC 72-21-N -□□	43	21.5	72	None	22
WC 72-21-C -□□	43	21.5	72	CR2032	25.5
WC 90-15-N -□□	44.2	15.7	90	None	23
WC 90-15-C -□□	44.2	15.7	90	CR2032	26.5
WC 90-21-N -□□	44.2	21.7	90	None	27
<b>NEW</b> WC105-28-N -□□	50.5	28.2	105	None	47
<b>NEW</b> WC105-28-F2-□□	50.5	28.2	105	AAA x 2	58.5

**WC dimensions**

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

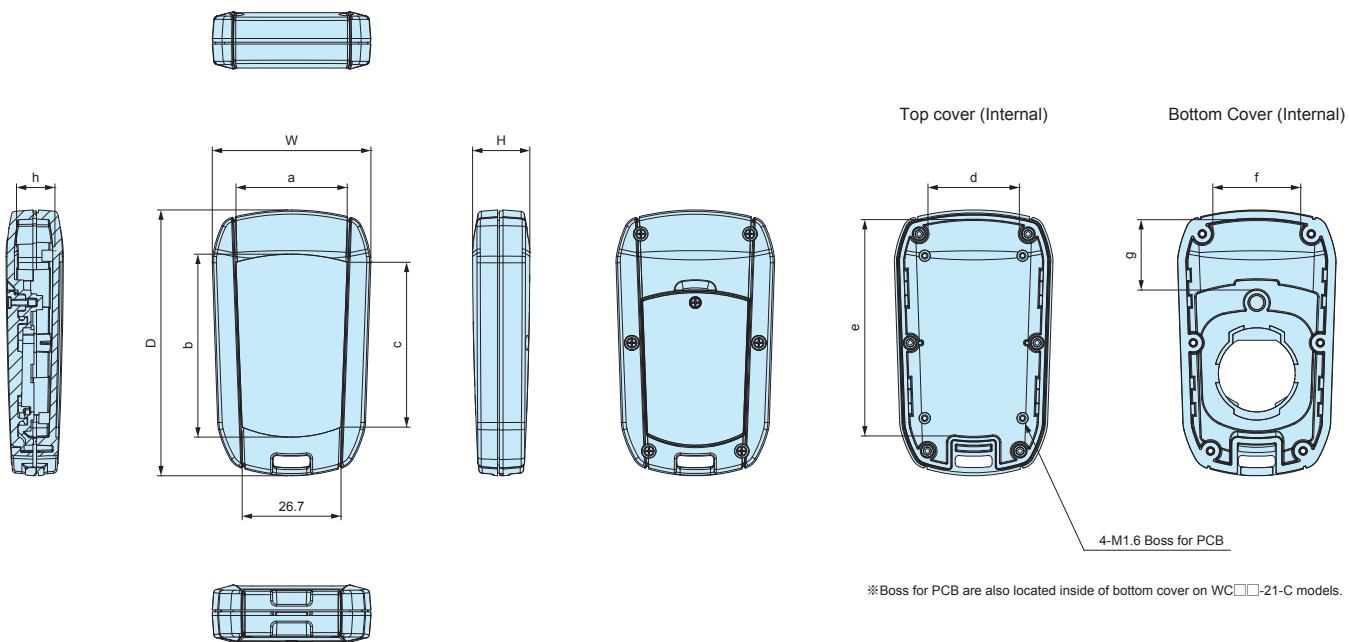
WC72-15-N / WC72-21-N  
WC90-15-N / WC90-21-N



※Boss for PCB are also located inside of bottom cover on WC□□-21-N models.

Product no.	W	H	D	a	b	c	d	e	f	g	h	i
WC72-15-N-□□	43	15.5	72	30.1	49.5	44.7	24.7	58.6	23.6	58.4	10.4	8.3
WC72-21-N-□□	43	21.5	72	30.1	49.5	44.7	24.7	58.6	23	56.3	16.3	14.3
WC90-15-N-□□	44.2	15.7	90	31.4	67.5	62.7	26.1	76.6	25	76.4	10.4	8.3
WC90-21-N-□□	44.2	21.7	90	31.4	67.5	62.7	26.1	76.6	24.4	74.3	16.4	14.3

WC72-15-C / WC72-21-C  
WC90-15-C



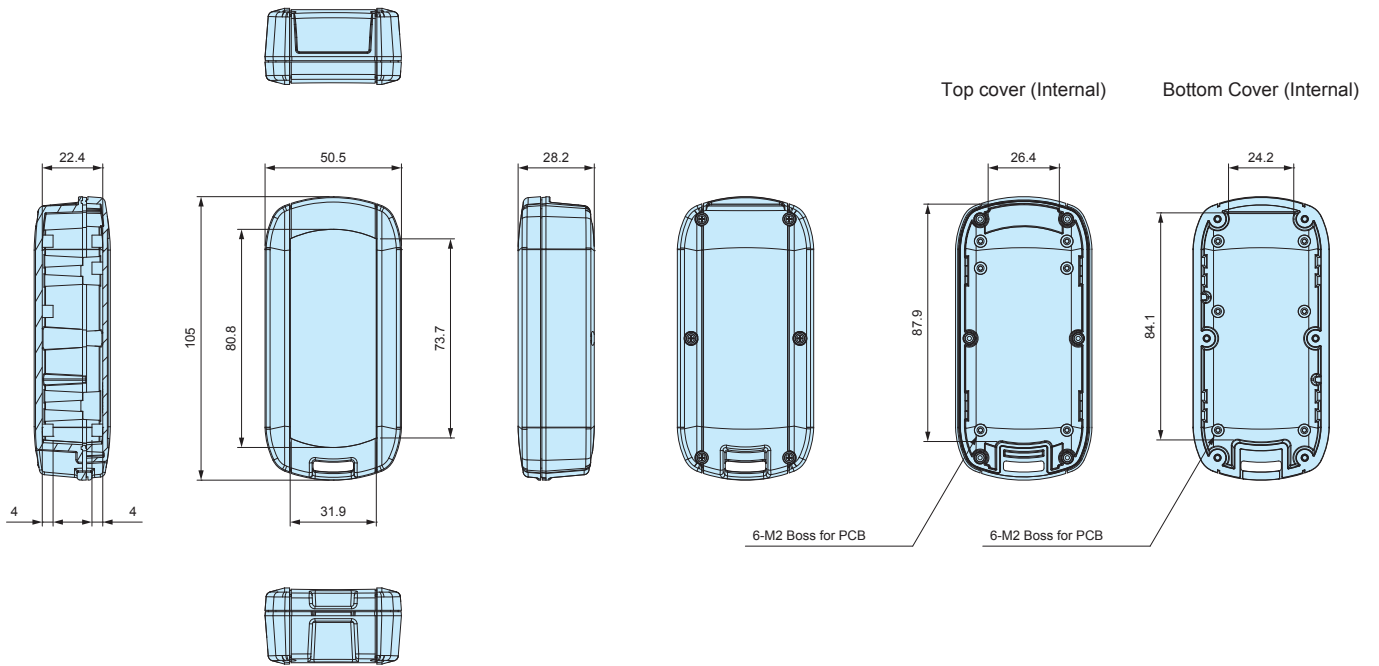
※Boss for PCB are also located inside of bottom cover on WC□□-21-C models.

Product no.	W	H	D	a	b	c	d	e	f	g	h
WC72-15-C-□□	43	15.5	72	30.1	49.5	44.7	24.7	58.6	23.8	19	10.4
WC72-21-C-□□	43	21.5	72	30.1	49.5	44.7	24.7	58.6	23	17.3	16.3
WC90-15-C-□□	44.2	15.7	90	31.4	67.5	62.7	26.1	76.6	25	36.9	10.4

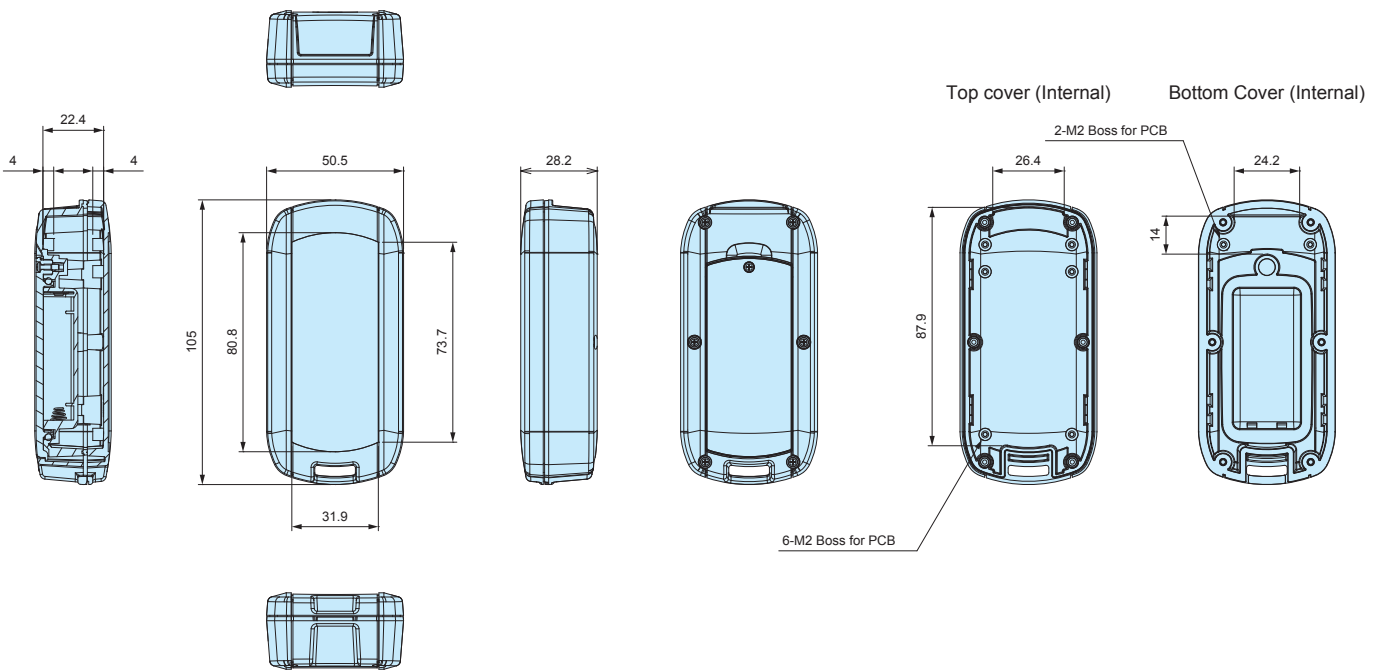
**WC dimensions**

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

WC105-28-N



WC105-28-F2

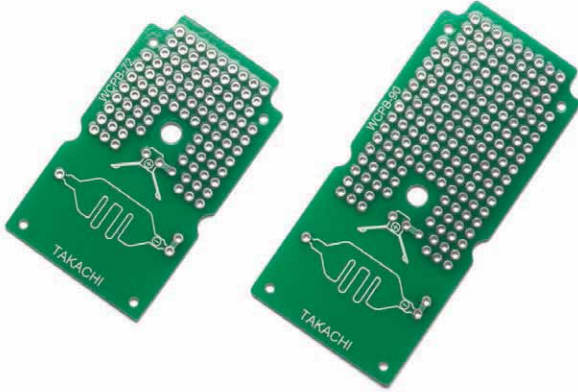




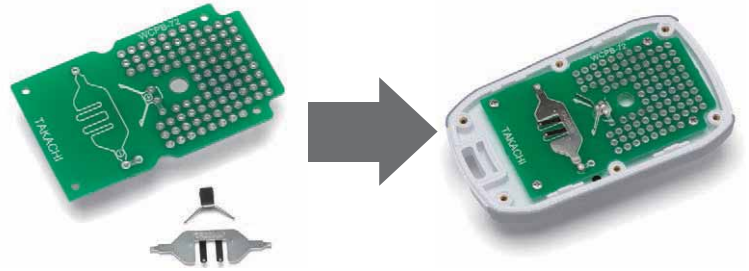
# WCPB SERIES

# EXCLUSIVE PCB for WC

- Exclusive PCB for WC series.
- Glass epoxy board (FR-4), through-holes on both sides, 2.54mm hole pitch.
- Designed with a battery contact hole. Battery contact position and direction are printed onto the pcb.

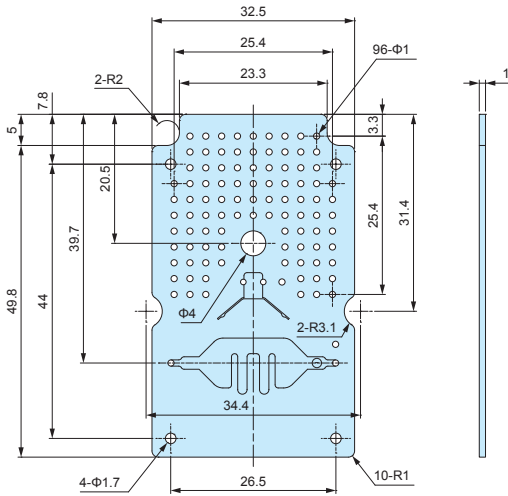


Please use battery contacts included with WC case.

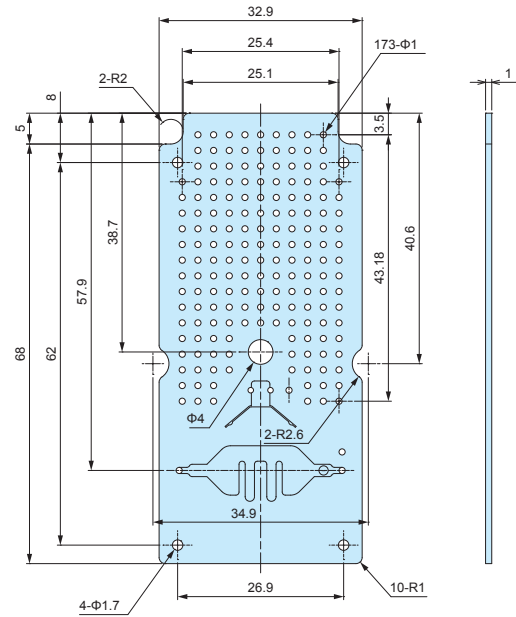


- DXF/DWG/PDF drawings available on our website.

WCPB-72



WCPB-90



Note : Holes (4-Φ1.7) for PCB mounting bosses are un-soldered.

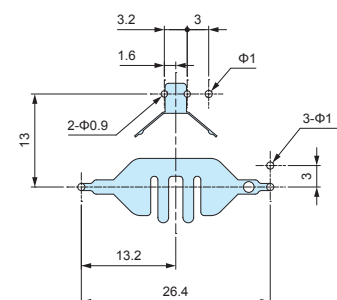
### Components

Part name	Pcs	Material	Color / Finish
PCB	1	Glass epoxy (FR-4) t=1.0	Through-hole • Lead-free solder • Solder resist
Screw	4	Steel (Tapping M1.6-4)	Trivalent chromate

### Product no. / Dimensions

Product no.	Suitable case
WCPB- 72	WC72-15-C WC72-21-C
WCPB- 90	WC90-15-C

Battery contact position details



# CSS - CS SERIES

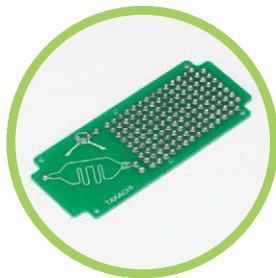
SMALL PLASTIC CASE WITH SILICONE COVER

Built-in CR2032 Coin Battery Compartment

Selectable in 3 sizes & 12 color combinations



Built-in CR2032  
battery compartment



Exclusive  
universal PCBs

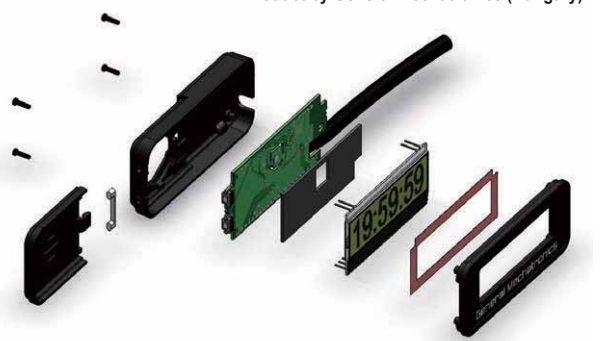


6 Colors

# APPLICATION EXAMPLE

## MOTOR SPORT INFRARED LAPTIMER (BLUETOOTH 4.0 & ANDROID APPLICATION)

Product by General Mechatronics (Hungary)



## BLUETOOTH TEMPERATURE DATA LOGGER

Product by Almendo Technologies (Germany)



## G TRIP-TRIP SENSOR for RELAY TESTER

Product by Musashi Intech (Japan)



## WIRELESS REMOTE CONTROL SWITCH

Product by Herutu Electronics Corporation (Japan)



## HANDI QUILTER EASY-SET TENSION™ Kit

Product by Handi Quilter, Inc (USA)



## WIRELESS MICROPHONE for HEARING AID

Product by Audinor AS (Norway)



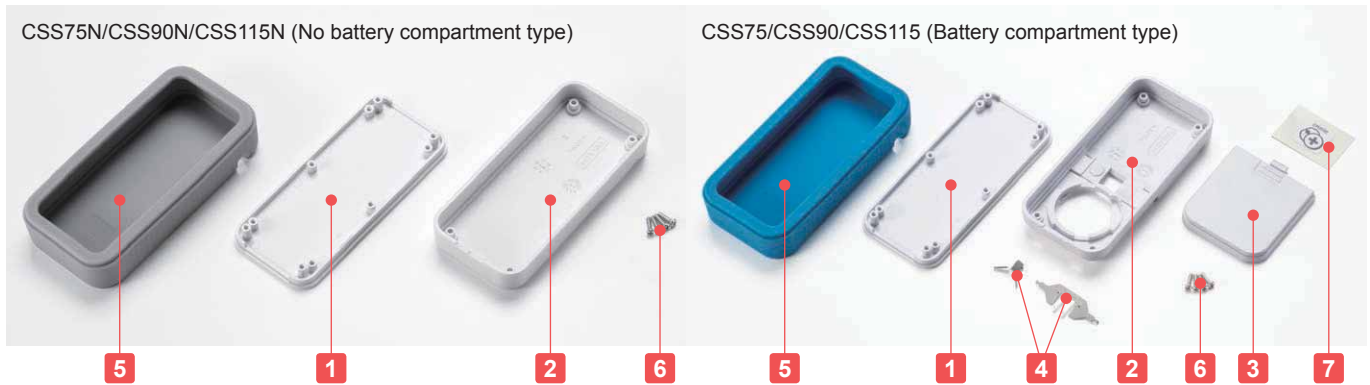
# CSS SERIES

# PORTABLE PLASTIC CASE with SILICONE COVER



Technical Data
Protection class: IP40
Operating temperature: -10°C ~ +60°C

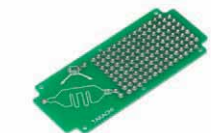
- Small plastic case with silicone cover. Strong against drop impact while providing a secure grip.
- Smart phone sized CSS115 comes with 2 CR2032 battery compartment while smaller sized single battery and no battery compartment types are also available.
- Suitable for remote controller, wireless key fob, small tester/device and so on.
- Available in 3 sizes with 6 models and selectable in 12 different color combinations.
- 2 types of silicone cover available which have with (Open) and without (Closed) rectangular cutout on the front side.



### Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS UL94HB	White • Black
2	Bottom cover	1	ABS UL94HB	White • Black
3	Battery cover	1	ABS UL94HB	White • Black
4	Battery contact	1 set / 2 set (CSS115)	Stainless steel	Nickel plated
5	Silicone cover	1	Silicone	Pink • Yellow • Green • Cyan • Light gray • Black
6	Self tapping screw	4	Steel M1.6	Nickel plated • Black trivalent chromate
7	CR2032 sticker	1	PP	—

### Accessories (Optional parts)



Exclusive PCB CSPB series  
See page CSPB-1



Strap STPS series  
See page STPS-1



PCB mounting screw EM-1.6  
See page EM • MR-1



TORX screw MR1.6-6S  
See page EM • MR-1



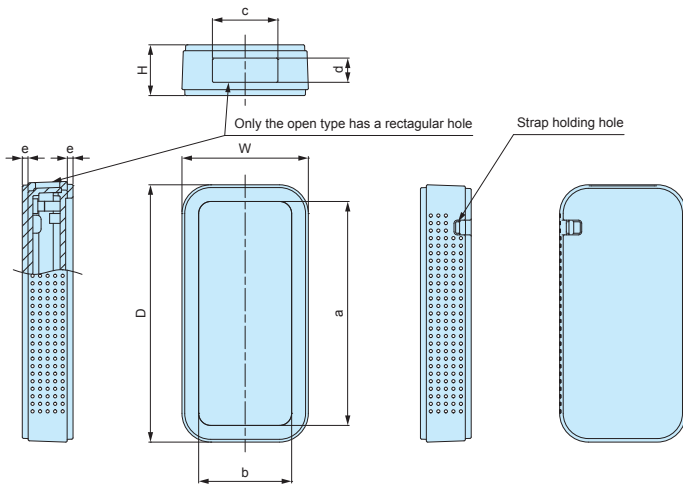
Neodymium magnet NMG series  
See page NMG-1

Silicone Cover Type



Color Type

Code	<b>B P</b> Black / Pink	<b>B Y</b> Black / Yellow	<b>B G</b> Black / Green	<b>B C</b> Black / Cyan	<b>B L</b> Black / Light gray	<b>B B</b> Black / Black
Color						
Code	<b>W P</b> White / Pink	<b>W Y</b> White / Yellow	<b>W G</b> White / Green	<b>W C</b> White / Cyan	<b>W L</b> White / Light gray	<b>W B</b> White / Black
Color						



Type	None CSS75N/90N/115N	CR2032 × 1 CSS75/CSS90	R2032 × 2 CSS115
Battery compartment			

- DXF/DWG/PDF drawings available on our website.
- Refer to drawings on page CSPB-1 for suitable PCB dimensions and screw hole layout.

Product no. / Dimensions

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

Product no.	W	H	D	a	b	c	d	e	Battery compartment	Weight (g)
CSS 75N-CL-□□	38.6(35)	15.5(12)	78.6 (75)	68.4	28.4	—	—	1.75	None	24
CSS 75N-OP-□□	38.6(35)	15.5(12)	78.6 (75)	68.4	28.4	20	7.4	1.75	None	24
CSS 75 -CL-□□	38.6(35)	15.5(12)	78.6 (75)	68.4	28.4	—	—	1.75	CR2032×1	25
CSS 75 -OP-□□	38.6(35)	15.5(12)	78.6 (75)	68.4	28.4	20	7.4	1.75	CR2032×1	25
CSS 90N-CL-□□	48.6(45)	15.5(12)	93.6 (90)	82.4	37.4	—	—	1.75	None	36
CSS 90N-OP-□□	48.6(45)	15.5(12)	93.6 (90)	82.4	37.4	30	7.4	1.75	None	35
CSS 90 -CL-□□	48.6(45)	15.5(12)	93.6 (90)	82.4	37.4	—	—	1.75	CR2032×1	38
CSS 90 -OP-□□	48.6(45)	15.5(12)	93.6 (90)	82.4	37.4	30	7.4	1.75	CR2032×1	37
CSS115N-CL-□□	67.1(63)	16 (12)	119.1(115)	107.4	55.4	—	—	2	None	62
CSS115N-OP-□□	67.1(63)	16 (12)	119.1(115)	107.4	55.4	45	7.4	2	None	61
CSS115 -CL-□□	67.1(63)	16 (12)	119.1(115)	107.4	55.4	—	—	2	CR2032×2	65
CSS115 -OP-□□	67.1(63)	16 (12)	119.1(115)	107.4	55.4	45	7.4	2	CR2032×2	64

■ ( ) value = enclosure dimension.



- Easy replacement of batteries. Battery contact included in each case (except for N type).
- Suitable for remote controller, wireless key fob, or small tester/device, and so on.
- 3 sizes with 2 different color types available.

Technical Data
Protection class: IP40
Operating temperature: -10°C ~ +60°C



Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS UL94HB	White • Black
2	Bottom cover	1	ABS UL94HB	White • Black
3	Battery cover	1	ABS UL94HB	White • Black
4	Battery contact	1 set / 2 set (CS115)	Stainless steel	Nickel plated
5	Self tapping screw	4	Steel M1.6	Nickel plated • Black trivalent chromate
6	CR2032 sticker	1	PP	—

Accessories (Optional parts)



Exclusive PCB CSPB series  
See page CSPB-1

Strap STPS series  
See page STPS-1

PCB mounting screw EM-1.6  
See page EM • MR-1

TORX screw MR1.6-6S  
See page EM • MR-1

Suspension bracket WM series  
See page WM-1

Neodymium magnet NMG series  
See page NMG-1

# Coin battery contact installation instructions

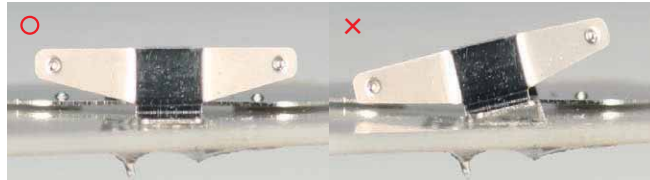


■ Exclusive PCB is available as an optional part. See page CSPB-1 for more details.  
Refer to drawings on page CSPB-1 for suitable PCB dimensions and screw hole layout.

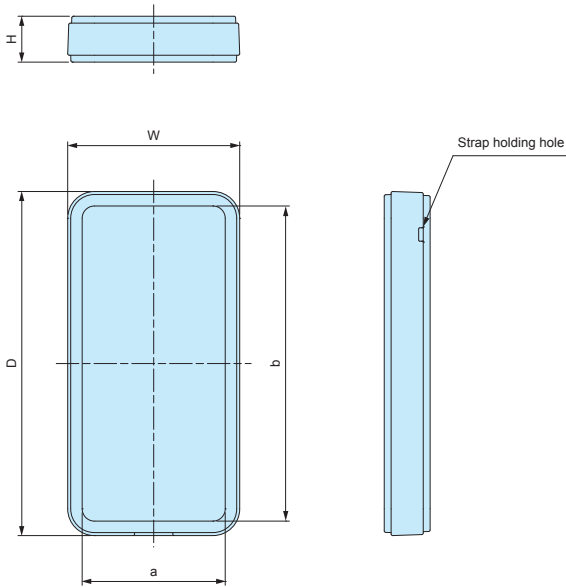


Stick the CR2032 sticker on the backside of the battery cover to avoid incorrect placement of the battery.

**NOTE** Take caution of the mount position of the battery contact.



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



Type	None CS75N/90N/115N	CR2032 × 1 CS75/CS90	CR2032 × 2 CS115
Battery compartment			

## Product no. / Dimensions

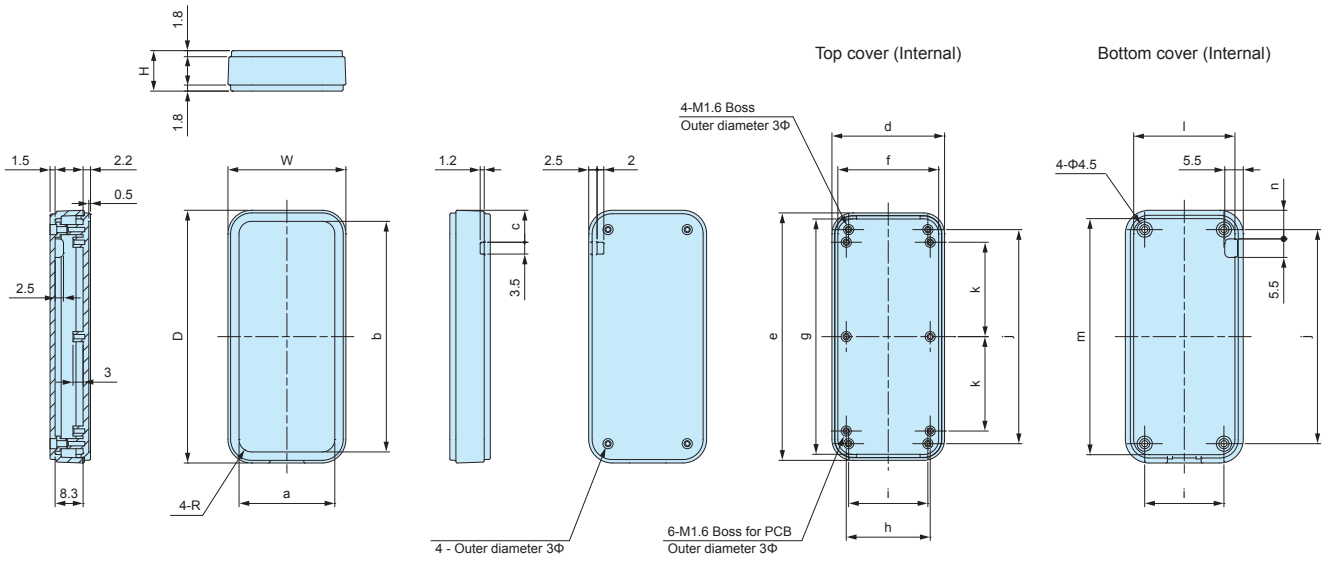
■ Please suffix color code at the end of the product number.

Product no.		W	H	D	a	b	Battery compartment	Weight (g)
● Black	● White							
CS 75N-B	CS 75N-W	35	12	75	28.4	68.4	None	12
CS 75 -B	CS 75 -W	35	12	75	28.4	68.4	CR2032 × 1	13
CS 90N-B	CS 90N-W	45	12	90	37.4	82.4	None	18
CS 90 -B	CS 90 -W	45	12	90	37.4	82.4	CR2032 × 1	20
CS115N-B	CS115N-W	63	12	115	55.4	107.4	None	30
CS115 -B	CS115 -W	63	12	115	55.4	107.4	CR2032 × 2	33

**CSS • CS dimensions**

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

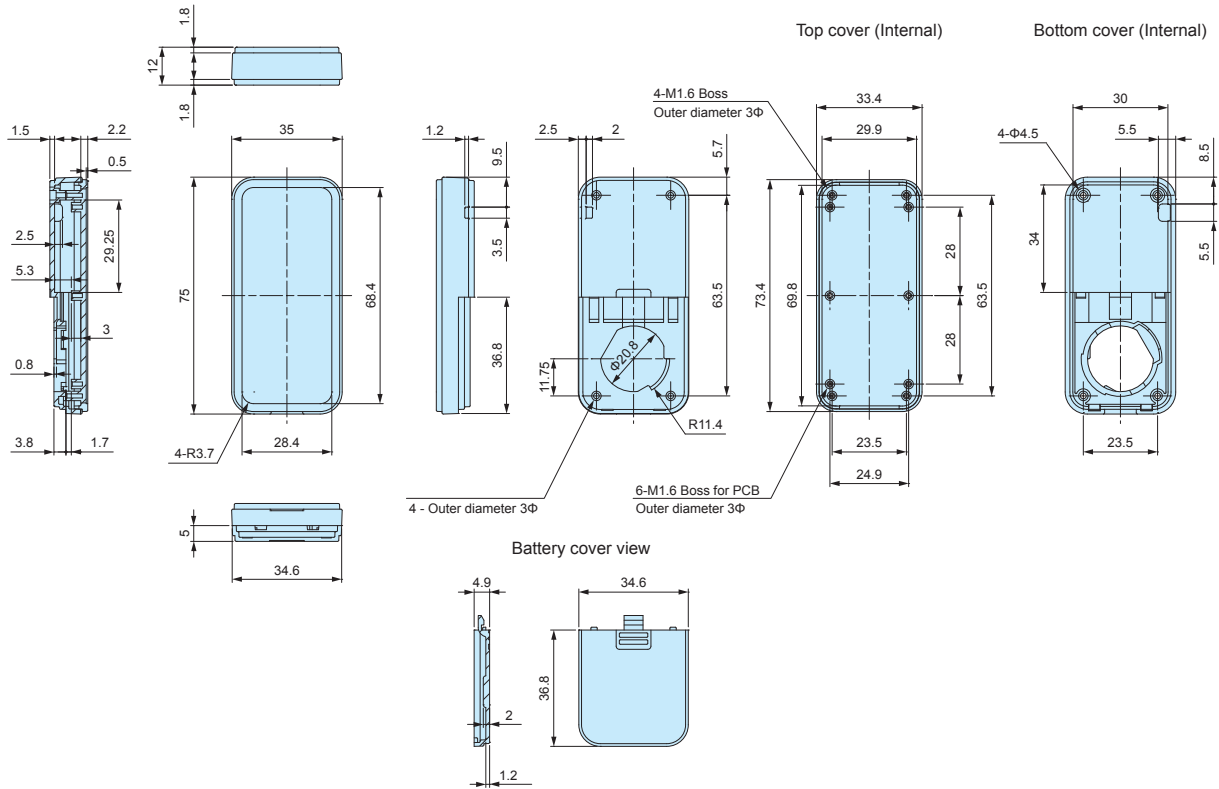
CS75N/CS90N/CS115N



Product no.	W	H	D	R	a	b	c	d	e	f	g	h	i	j	k	l	m	n
CS75 N-□	35	12	75	3.7	28.4	68.4	9.5	33.4	73.4	29.9	69.8	24.9	23.5	63.5	28	30	70	8.5
CS90 N-□	45	12	90	3.2	37.4	82.4	9.5	43.4	88.4	39.9	84.8	34.9	33.5	78.5	35.5	40	85	8.5
CS115N-□	63	12	115	4.7	55.4	107.4	10.5	61.4	113.4	57.9	109.8	52.9	50.5	102.5	47.5	58	110	9.5

CS75

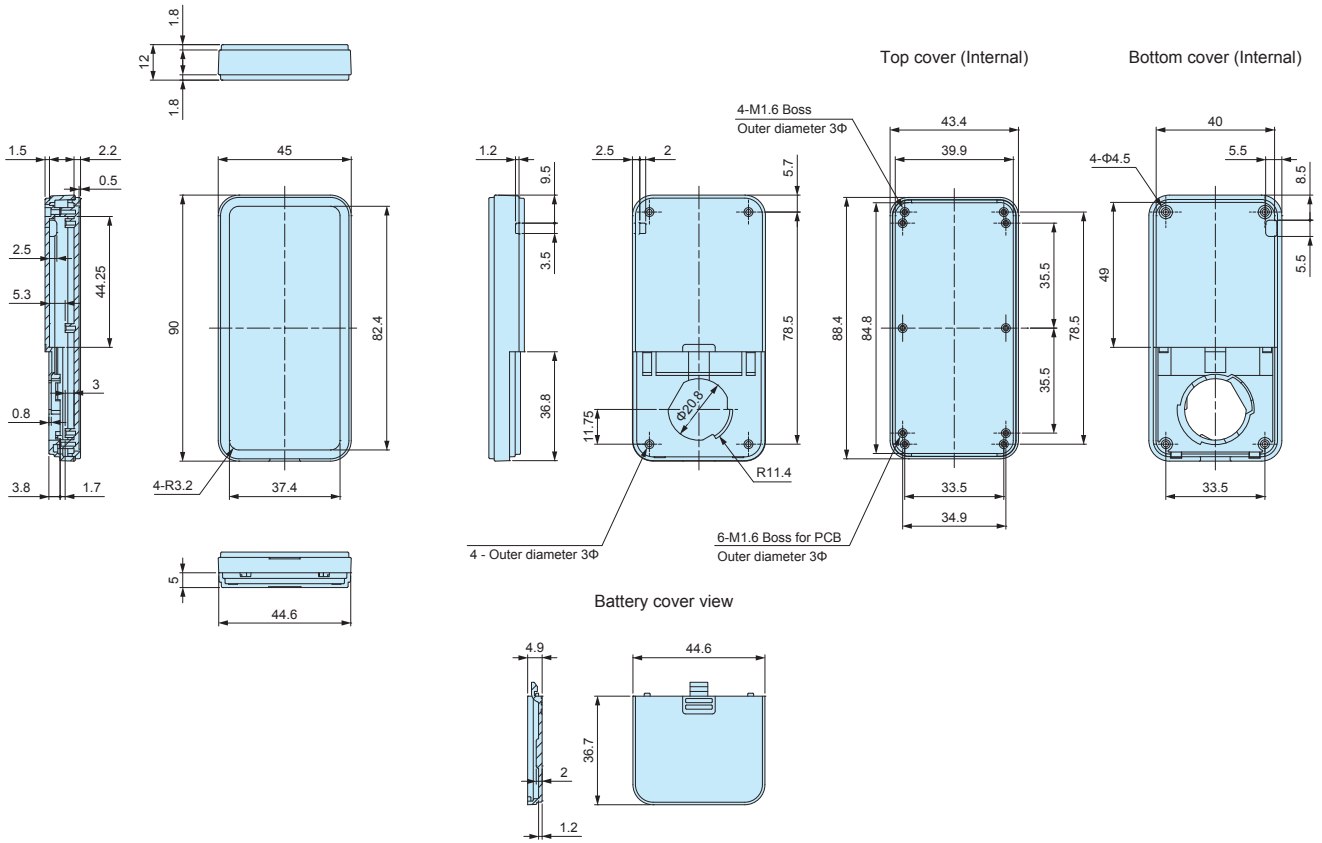
■ Refer to drawings on page CSPB-1 for suitable PCB dimension and screw hole layout.





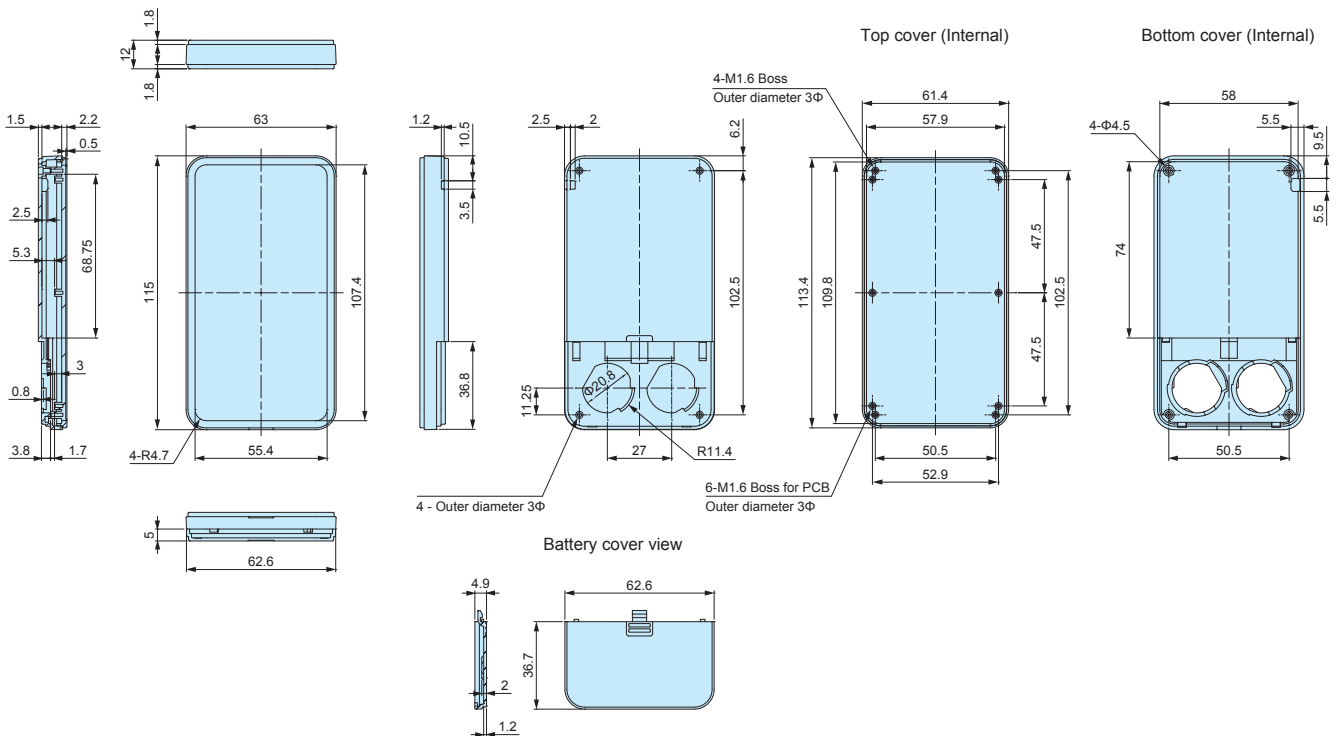
CS90

■ Refer to drawings on page CSPB-1 for suitable PCB dimension and screw hole layout.



CS115

■ Refer to drawings on page CSPB-1 for suitable PCB dimension and screw hole layout.



# CSSC SERIES

# SILICONE COVER

### Silicone Cover Type



- 2 types of silicone cover which have with (Open) and without (Closed) rectangular cutout on the front side; selectable in 6 different colors.

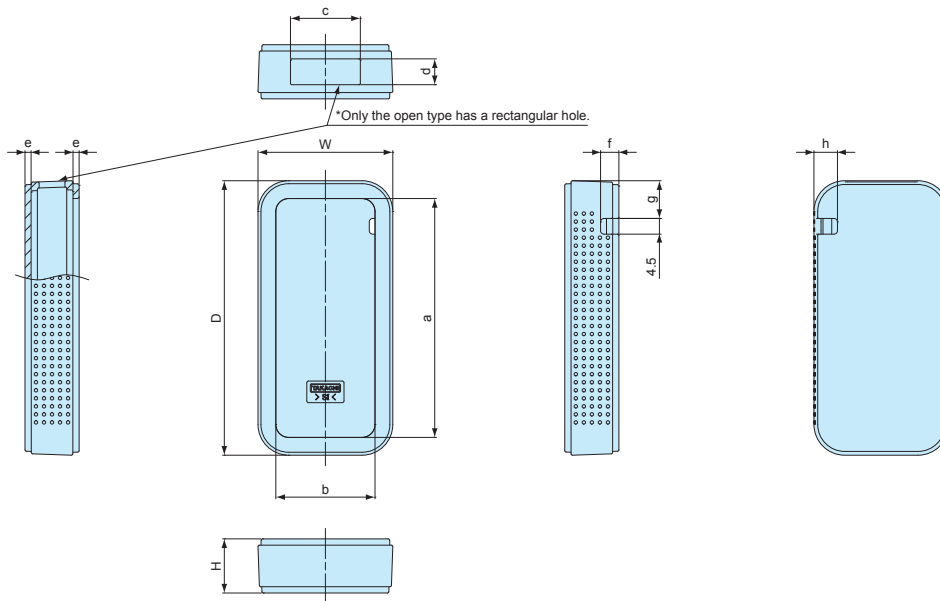
- Custom color is available from 1,000pcs per order batch.

For custom color order, please specify **PANTONE®**, RGB color number, or provide your sample color.

### Color Type



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



### Components

Part name	Material	Color
Silicone cover	Silicone	Pink • Yellow • Green • Cyan • Light gray • Black

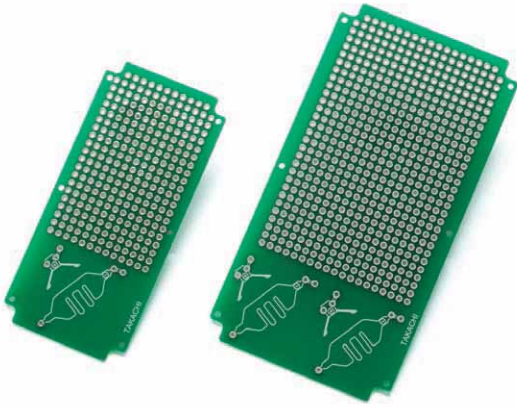
### Product no. / Dimensions

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

Product no.	W	H	D	a	b	c	d	e	f	g	h	Suitable case	Weight (g)
CSSC 75-CL-□	38.6	15.5	78.6	68.4	28.4	—	—	1.75	5.25	10.8	6.7	CS 75	12
CSSC 75-OP-□	38.6	15.5	78.6	68.4	28.4	20	7.4	1.75	5.25	10.8	6.7	CS 75	12
CSSC 90-CL-□	48.6	15.5	93.6	82.4	37.4	—	—	1.75	5.25	10.8	6.7	CS 90	18
CSSC 90-OP-□	48.6	15.5	93.6	82.4	37.4	30	7.4	1.75	5.25	10.8	6.7	CS 90	17
CSSC115-CL-□	67.1	16	119.1	107.4	55.4	—	—	2	5.5	12.1	7	CS115	32
CSSC115-OP-□	67.1	16	119.1	107.4	55.4	45	7.4	2	5.5	12.1	7	CS115	31

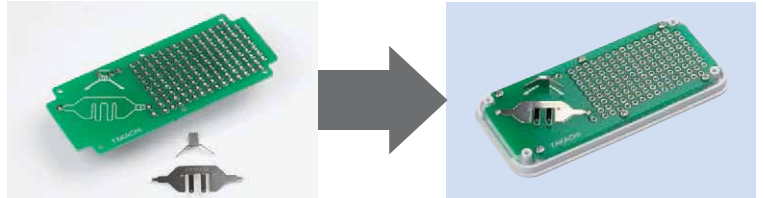
CSPB SERIES

EXCLUSIVE PCB for CS • CSS



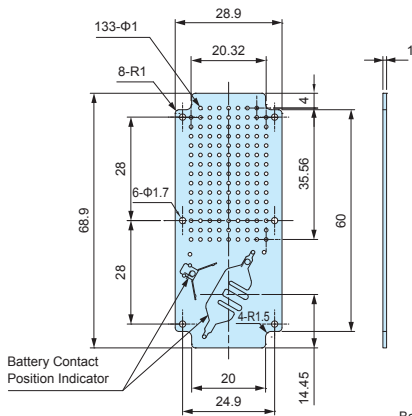
- Exclusive PCB for CS • CSS case.
- Glass epoxy board (FR-4), through-hole on both sides and 2.54mm hole distance.
- Prefabricated holes for battery contact use with CS • CSS case. The contact directions are printed on the PCB.

Soldering the battery contacts (included with each case) onto the PCB.

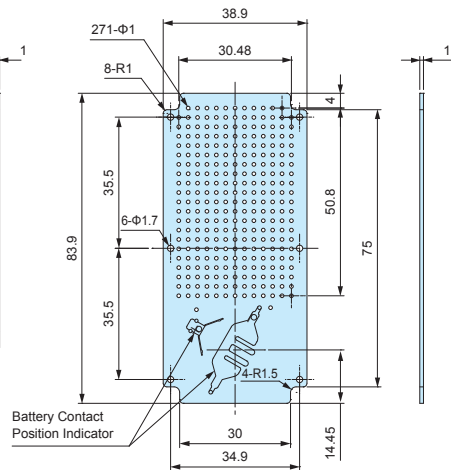


- DXF/DWG/PDF drawings available on our website.

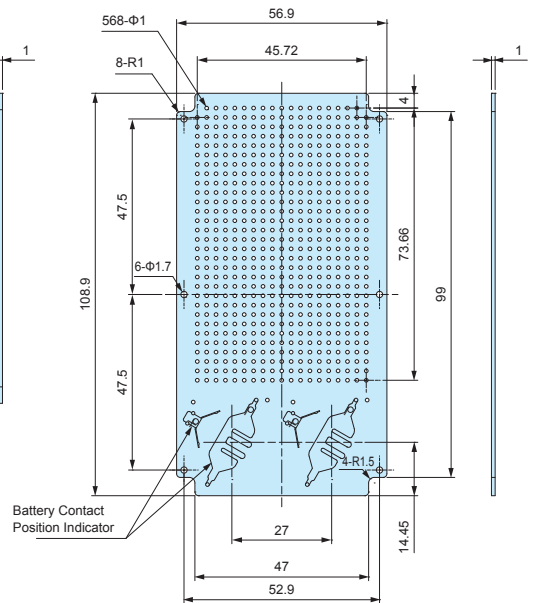
CSPB-75



CSPB-90



CSPB-115



Note : Holes (6-Φ1.7) for PCB mount bosses are un-soldered.

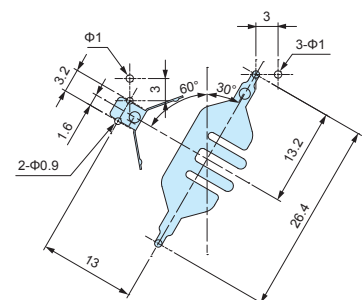
Components

Part name	Pcs	Material	Finish
PCB	1	Glass epoxy (FR-4) t=1.0	Through-hole • Lead-free solder • Solder resist
Self tapping screw	6	Steel M1.6	Trivalent chromate

Product no.

Product no.	Suitable case
CSPB- 75	CS75, CSS75
CSPB- 90	CS90, CSS90
CSPB-115	CS115, CSS115

Battery Contact Position Indicator Details



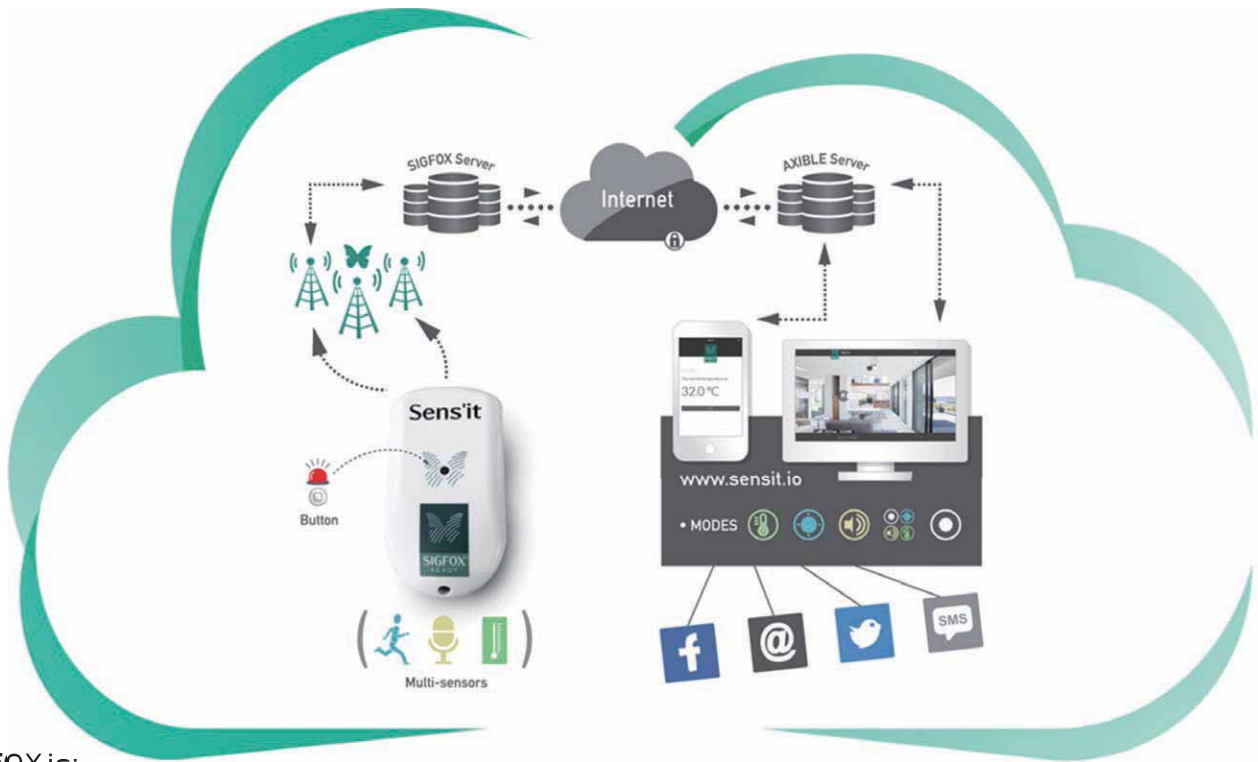
# PS SERIES PORTABLE PLASTIC CASE

Suitable for wireless device, remote controller, key fob, and so on.  
Available in 4 different sizes with 5 selectable colors.

## PORTABLE MULTI-SENSOR SYSTEM Product by Axible Technologies (France)



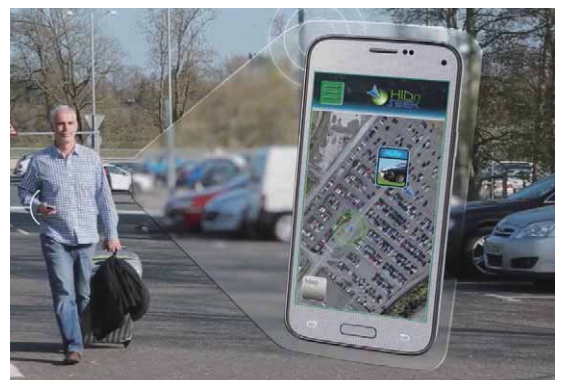
Multi-sensor system which detects motion, temperature, humidity and sound. Warnings are sent to the owner, or 3rd parties via SMS, Twitter or Facebook when events such as a home invasion, or when a fire occurs.



### SIGFOX is:

A French company that builds wireless ultra-narrow band (UNB) networks, for the connection of low-energy consumption devices such as electricity meters, smart-watches, and washing machines, which needs to be continuously on and emitting small amounts of data. This wireless network technology, which is aimed at the Internet of Things (IoT), is starting to gain popularity and rolling out in the fields such as housing, automobiles, transportation and logistics, smart city connectivity, healthcare, and so on.

## GPS TRACKER TAG (via SIGFOX NETWORK) Product by HidnSeek (France)



Example: Locating your car in a large parking area

# APPLICATION EXAMPLE

## REMOTE CONTROLLER for UNDERCOVER INVESTIGATION

Product by CopTech (Germany)



## RE-MOTE SUITE-IOT DEVELOPMENT PLATFORM

Product by Zolertia (Spain)



## BEACON RECEIVER

Product by GP Shopper (USA)



## GPS TRACKER with TEMPERATURE DATA LOGGER

Product by HidnSeek (France)



## PORTABLE RADIATION CHECKER AND MONITOR

Product by Yamagata Kyodo (Japan)



TAKACHI "BK-890" Coin battery holder.

## PORTABLE EMF PROTECTION DEVICE

Product by Blushield Inc. (New Zealand)



## LPWA RECEIVER

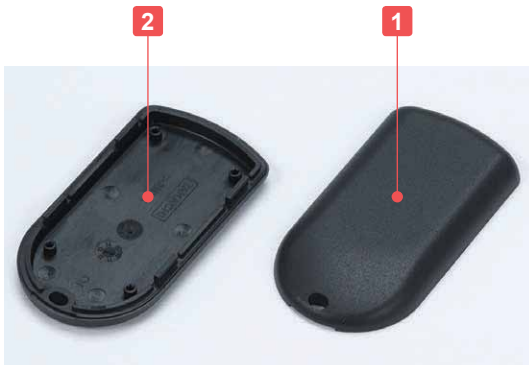


PS SERIES

PORTABLE PLASTIC CASE



Technical Data
Protection class: IP40
Operating temperature: -10°C ~ +60°C



- Simple snap-in case without screws.
- Comfortable shape and hold.
- 5 different colors are available for selection.
- Suitable for use as a wireless device, remote control, key fob etc.
- Designed with an easily accessible hole for strap attachment.

Components

No.	Part name	Material	Color / Finish
1	Top cover	ABS UL94HB	White • Black • Cobalt • Green • Pink
2	Bottom cover	ABS UL94HB	White • Black • Cobalt • Green • Pink

Product no. / Dimensions

Product no.					Dimensions			Weight (g)
● White	● Black	● Cobalt	● Green	● Pink	W	H	D	
PS- 50W	PS- 50B	PS- 50C	PS- 50G	PS- 50P	50	14	50	9
PS- 65W	PS- 65B	PS- 65C	PS- 65G	PS- 65P	35	11	65	9
PS- 85W	PS- 85B	PS- 85C	PS- 85G	PS- 85P	48	15	85	20
PS-100W	PS-100B	PS-100C	PS-100G	PS-100P	58	18	100	27

Accessories (Optional parts)



PCB mounting screw EM-1.6  
See page EM • MR-1



Strap STPS series  
See page STPS-1

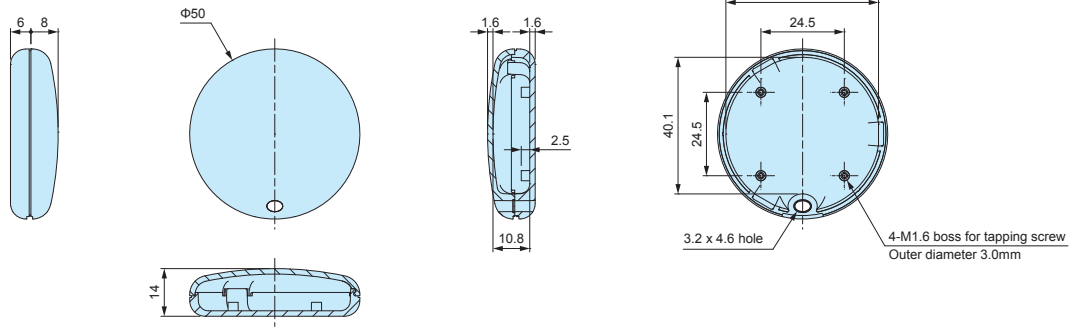


Neodymium magnet NMG series  
See page NMG-1

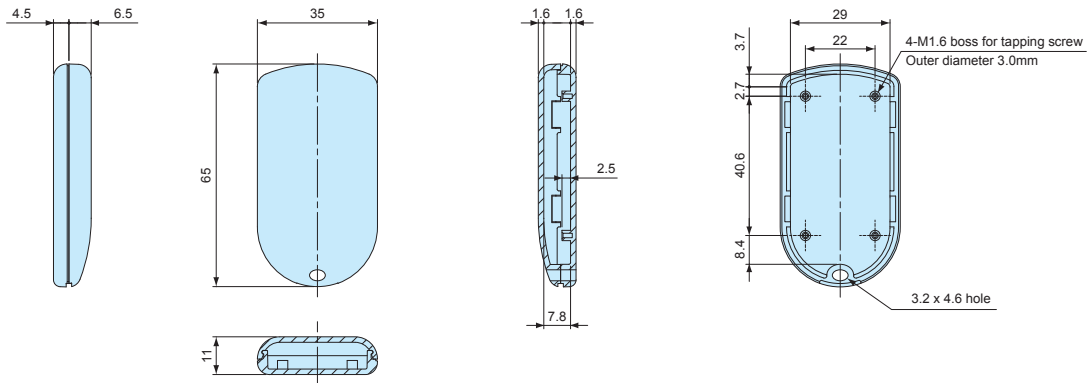
PS dimensions

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

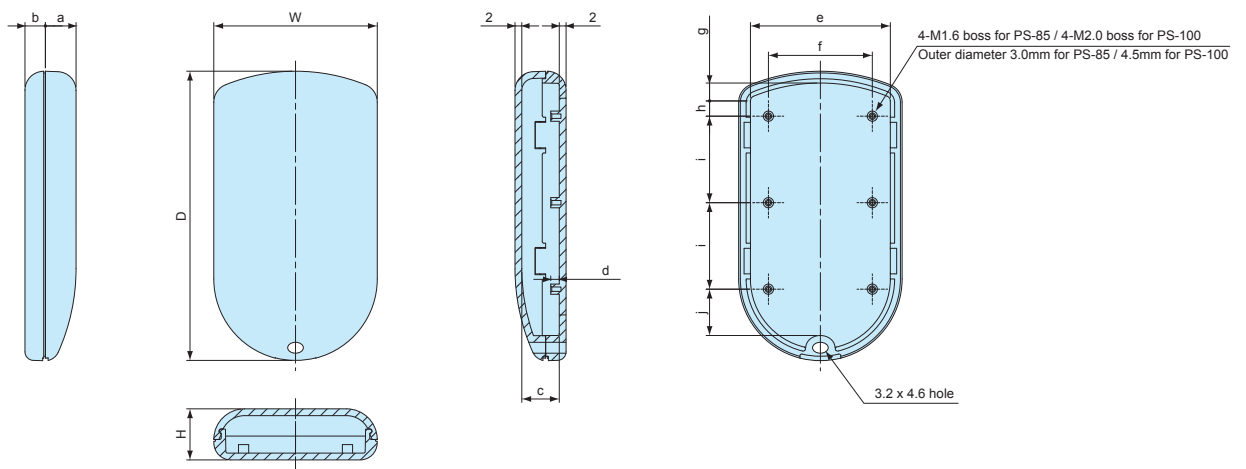
PS-50□



PS-65□

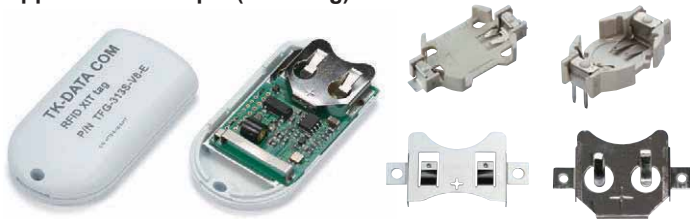


PS-85□ / PS-100□



Product no.	W	H	D	a	b	c	d	e	f	g	h	i	j
PS- 85□	48	11	85	9	6	11	2.5	41.1	33	5.3	4.5	25.4	13.6
PS-100□	58	18	100	11.5	6.5	14	4	51.2	40	6.4	4.2	29	20.4

Application example (RFID Tag)



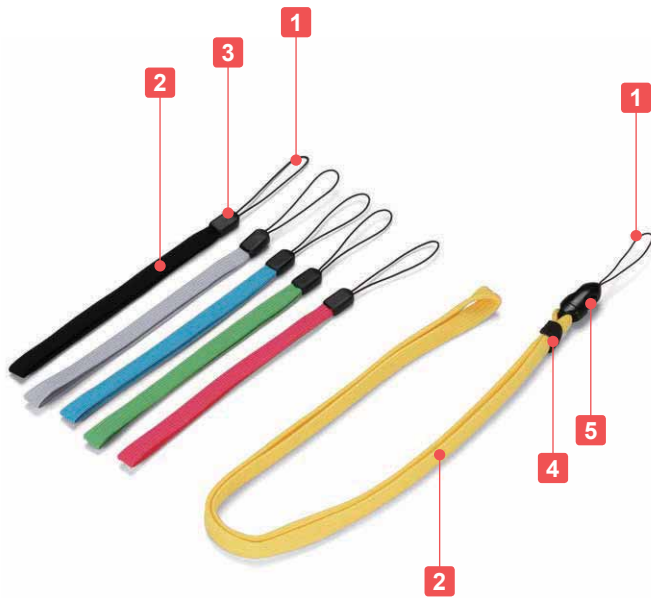
■ A variety of suitable coin battery holders are available.  
See battery holder pages for more details.

Suitable coin battery holder chart

Suitable case	Coin battery holder product no.
PS- 50□	SMTU1220(G) / 1225 / 1632(G) / 2-2016 / 2032(G) PB-621 • SMTM1632 / 2032 BK-879 / 5091 / 885 / 890 / 868 / 869 / 5067 / 888
PS- 65□	BK-879 / 5091 / 885 / 890 / 868 / 869 / 5067 / 888 PB621 • SMTM1632 / 2032
PS- 85□	PB621 • SMTM1632 / 2032 BK-879 / 5091 / 885 / 890 / 868 / 869 / 5067 / 888 SMTU1220(G) / 1225 / 1632(G) / 2-2016 / 2032(G) / 2430
PS-100□	PB621 • SMTM1632 / 2032 BK-879 / 5091 / 885 / 890 / 868 / 869 / 5067 / 888 SMTU1220(G) / 1225 / 1632(G) / 2-2016 / 2032(G) / 2430 / 2450

STPS SERIES

STRAP



Wrist strap (STPS-140P)



Neck strap (STPS-450Y)



- Colorful and sturdy straps best used with CSS, CS and PS series.
- Wrist and Neck straps are available in 6 unique colors.
- Neck strap comes with a quick-release joint, making removal or attachment quick and easy.



Color Type

Code	P Pink	Y Yellow	G Green	C Cyan	L Light gray	B Black
Color						

Components

No.	Part name	Material	Color
1	String	Polyester	Black
2	Strap	Polyester	Pink • Yellow • Green • Cyan • Light gray • Black
3	Cap (wrist strap only)	Nylon	Black
4	Clamp (neck strap only)	Elastomer	Black
5	Joint (neck strap only)	Polyacetal	Black

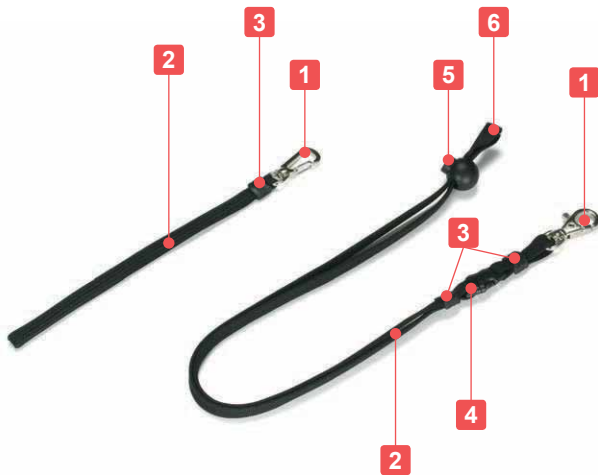
Product no. / Dimensions

Product no.						Strap width	Strap length
Pink	Yellow	Green	Cyan	Light gray	Black		
STPS-140P	STPS-140Y	STPS-140G	STPS-140C	STPS-140L	STPS-140B	8	140
STPS-450P	STPS-450Y	STPS-450G	STPS-450C	STPS-450L	STPS-450B	10	450



STP SERIES

STRAP



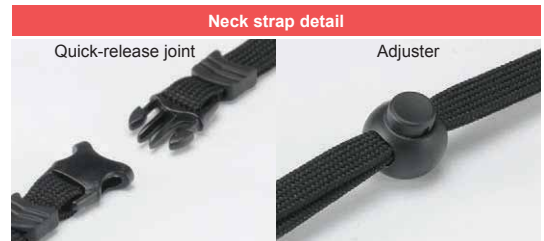
Wrist strap (STP-200)



Neck strap (STP-450)



- Strap with a metal hook
- Recommended to be used with CR key ring.



■ Only the neck strap has a joint and an adjuster.

Components

No.	Part name	Pcs	Material	Color / Finish
1	Metal hook	1	Diecast zinc & steel	Nickel plated
2	Strap	1	Nylon / Polyester	Black
3	Cap	1 / 2	Polyurethane / Elastomer	Black
4	Joint (Neck strap only)	1	Polyacetal	Black
5	Adjuster (Neck strap only)	1	Nylon	Black
6	Clamp (Neck strap only)	1	PE	Black

Product no. / Dimensions

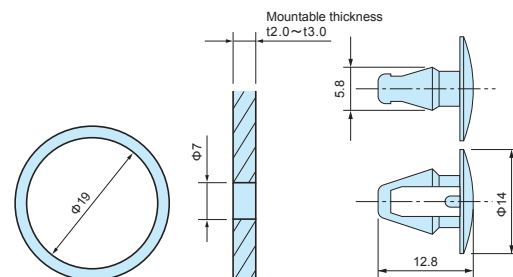
Product no.	Strap width	Strap length	Strap material	Cap material
STP-200	8	200	Nylon	Polyurethane x 1
STP-450	10	450	Polyester	Elastomer x 2

CR-20

KEY RING



- Hole milling is required for case installation.



Components

Part name	Material	Color / Finish
Ring	SWRM 6 Steel	Nickel plated
Insert clip	Nylon	Black

Product no. / Dimensions

Product no.	Ring Φ	Installation hole	Mounting thickness
CR-20	Φ19	Φ7	t2.0 ~ t3.0

# 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 outdoors usage as a communication device type equipment.

### Outdoors Use Example

IT Sensor Data Logger for agriculture  
Product by Nishimu Electronics Industries Co., Ltd.  
Website : [nishimu.co.jp/index-e.html](http://nishimu.co.jp/index-e.html)



## Easy installation on walls and brackets

Easy mounting onto walls and brackets 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.



## How to make buttons and switches waterproof

Utilize a waterproof membrane keypad, membrane switch or overlay.

Note that the waterproof performance will be lost once holes or cutouts for buttons and/or switches drilled/machined on waterproof enclosures.



## How to make waterproof buttons and switches

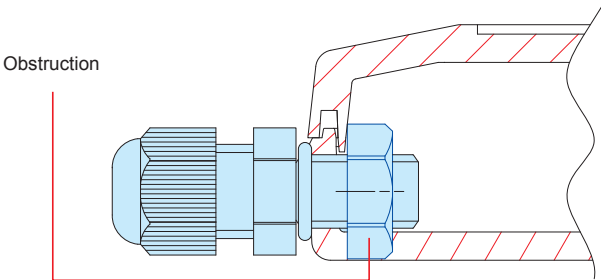
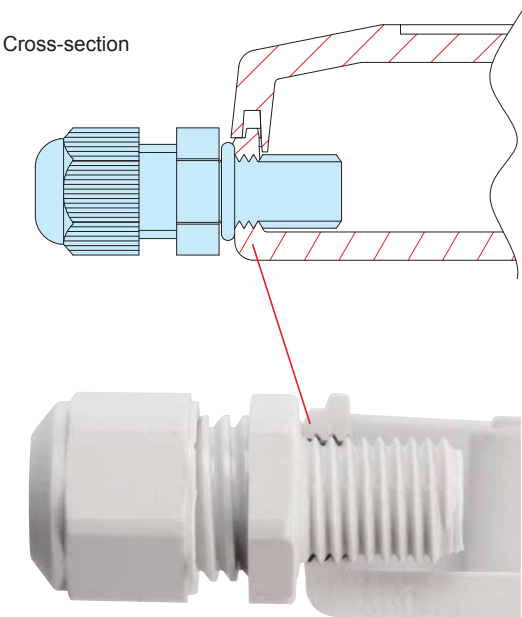
Please utilize a waterproof membrane keypad, membrane switch or overlay.

Note that the waterproof performance will be lost by drilling/milling holes or cutouts for buttons or switches on waterproof enclosures.



Please utilize a waterproof membrane keypad, membrane switch or overlay.

Note that the waterproof performance will be lost by drilling/milling holes or cutouts for buttons or switches on waterproof enclosures.



Thread hole milling from M6 ~ M32 sizes can be drilled as per your requirements.



# WP SERIES

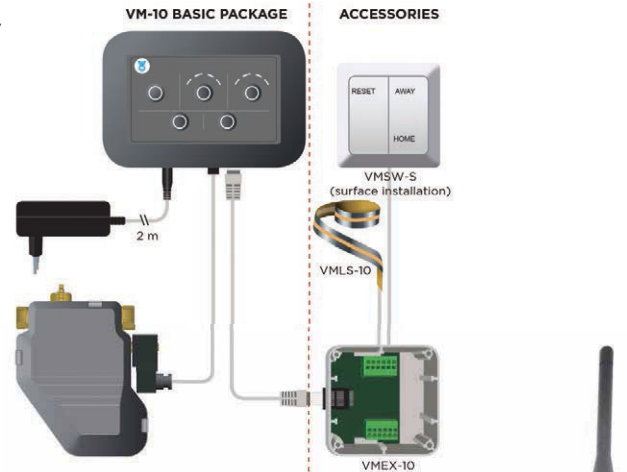
# APPLICATION EXAMPLE



## LeakLess Monitor - Industrial Pressure/Flow Data Logger



## Leak Guard - Home Water Leak Detector



## Wireless Temperature/Humidity Transmitter

Product by Masibus Automation And Instrumentation (India)



## LoRaWAN Network Air Pressure Sensor



## Sigfox Remote Surveillance Sensor



## Network Sensor for Agriculture

Product by Demand Side Instruments (France)



## Remote Sprinkler Control Unit



Product by Demand Side Instruments (France)



## Argonomic Parameter Surveillance Unit LoRa Gateway

Product by  
Argotec Engineering (Spain)



## Maritime GPS Tracking System

Product by HidnSeek (France)





- IP67 protection class allows the unit to be used outdoors while protecting the internal components from dust and water.
- Available in 2 types : UV-resistant ASA in white gray color, and flame-resistant ABS in charcoal gray color.
- Addition of 8 sizes for a total of 24 different selectable sizes.
- Mount on walls or brackets by simply opening the blind lids.
- Pole mounting is possible via an optional pole mounting bracket accessory.

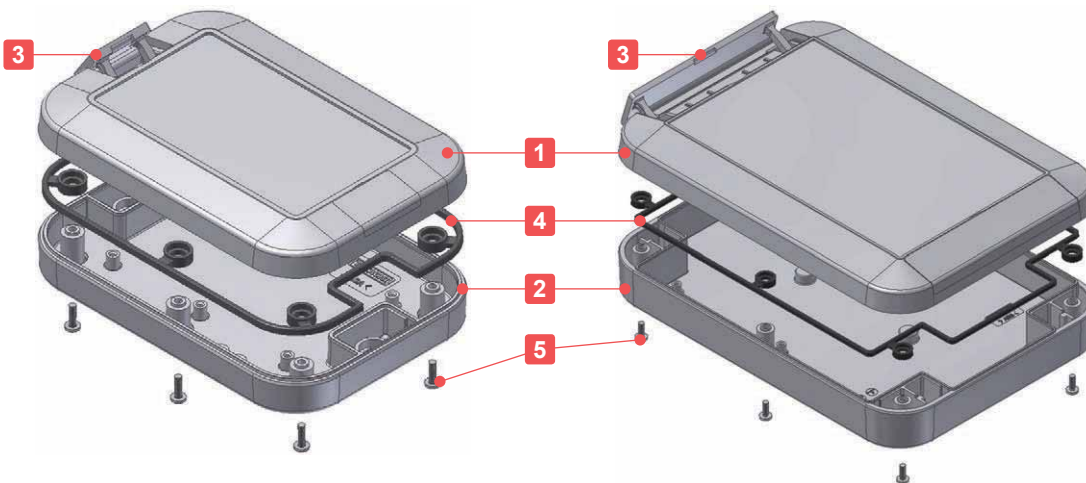


Technical Data	
Protection class :	IP67
Operating temperature :	ASA* -30 ~ +60°C
	ABS -10 ~ +50°C

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

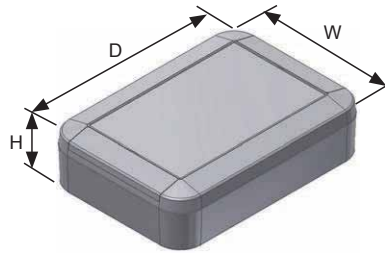
WP5-7-2 ~ WP13-18-5

WP15-15-4 ~ WP20-28-7



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



**Product no. / Dimensions**

Product no.		Dimensions			Weight (g)	Screw	Recommended torque (N · m)	
● White gray (ASA)	● Charcoal gray (ABS)	W	D	H			Box Assembling	PCB Mounting
WP 5- 7-2G	WP 5- 7-2C	52	65	18	31.5	M2-8 x 4 pcs	0.2 ~ 0.25	0.12 ~ 0.15
WP 5- 7-3G	WP 5- 7-3C	52	65	27	39.5	M2-8 x 4 pcs	0.2 ~ 0.25	0.12 ~ 0.15
WP 6- 8-2G	WP 6- 8-2C	60	80	20	41.5	M2-8 x 4 pcs	0.25 ~ 0.3	0.12 ~ 0.15
WP 6- 8-3G	WP 6- 8-3C	60	80	30	49	M2-8 x 4 pcs	0.25 ~ 0.3	0.12 ~ 0.15
WP 8- 8-2G	WP 8- 8-2C	75	75	22	57.5	M2.5-8 x 4 pcs	0.25 ~ 0.35	0.12 ~ 0.15
WP 8- 8-4G	WP 8- 8-4C	75	75	35	88.5	M2.5-16 x 4 pcs	0.25 ~ 0.35	0.12 ~ 0.15
WP 8-10-2G	WP 8-10-2C	75	100	22	74	M2.5-8 x 4 pcs	0.25 ~ 0.35	0.12 ~ 0.15
WP 8-10-4G	WP 8-10-4C	75	100	35	95	M2.5-16 x 4 pcs	0.25 ~ 0.35	0.12 ~ 0.15
WP 9-13-3G	WP 9-13-3C	90	130	25	113	M2.5-8 x 6 pcs	0.25 ~ 0.35	0.2 ~ 0.25
WP 9-13-4G	WP 9-13-4C	90	130	40	141	M2.5-16 x 6 pcs	0.25 ~ 0.35	0.2 ~ 0.25
WP10-10-3G	WP10-10-3C	100	100	25	96	M2.5-8 x 4 pcs	0.25 ~ 0.35	0.2 ~ 0.25
WP10-10-4G	WP10-10-4C	100	100	40	121	M2.5-16 x 4 pcs	0.25 ~ 0.35	0.2 ~ 0.25
WP11-15-3G	WP11-15-3C	110	150	27	153	M2.5-8 x 6 pcs	0.25 ~ 0.35	0.2 ~ 0.25
WP11-15-4G	WP11-15-4C	110	150	40	181	M2.5-16 x 6 pcs	0.25 ~ 0.35	0.2 ~ 0.25
WP13-18-3G	WP13-18-3C	130	175	30	225	M2.5-8 x 6 pcs	0.25 ~ 0.35	0.2 ~ 0.25
WP13-18-5G	WP13-18-5C	130	175	45	266	M2.5-16 x 6 pcs	0.25 ~ 0.35	0.2 ~ 0.25
<b>NEW</b> WP15-15-4G	<b>NEW</b> WP15-15-4C	150	150	40	239	M3-8 x 4 pcs	0.35 ~ 0.45	0.2 ~ 0.3
<b>NEW</b> WP15-15-6G	<b>NEW</b> WP15-15-6C	150	150	55	282.5	M3-8 x 4 pcs	0.35 ~ 0.45	0.2 ~ 0.3
<b>NEW</b> WP15-21-4G	<b>NEW</b> WP15-21-4C	150	210	40	323	M3-8 x 6 pcs	0.35 ~ 0.45	0.2 ~ 0.3
<b>NEW</b> WP15-21-6G	<b>NEW</b> WP15-21-6C	150	210	55	367.5	M3-8 x 6 pcs	0.35 ~ 0.45	0.2 ~ 0.3
<b>NEW</b> WP20-20-5G	<b>NEW</b> WP20-20-5C	200	200	45	434	M3-8 x 8 pcs	0.35 ~ 0.45	0.2 ~ 0.3
<b>NEW</b> WP20-20-7G	<b>NEW</b> WP20-20-7C	200	200	65	505	M3-8 x 8 pcs	0.35 ~ 0.45	0.2 ~ 0.3
<b>NEW</b> WP20-28-5G	<b>NEW</b> WP20-28-5C	200	280	45	557.5	M3-8 x 8 pcs	0.35 ~ 0.45	0.2 ~ 0.3
<b>NEW</b> WP20-28-7G	<b>NEW</b> WP20-28-7C	200	280	65	646	M3-8 x 8 pcs	0.35 ~ 0.45	0.2 ~ 0.3

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

■ G color type shall undergo a revision. Color shall change from "White gray - RAL7035" to "Munsell N8.75 or similar".

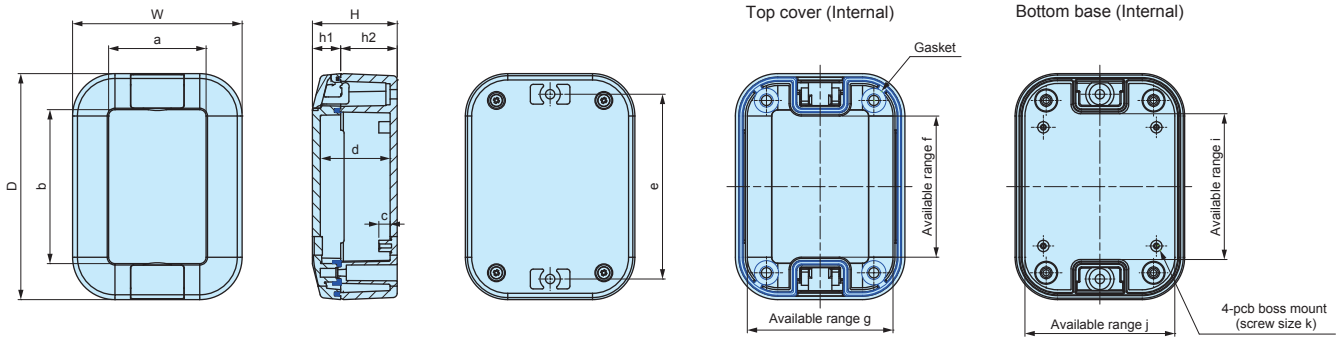


**Accessories (Optional parts)**



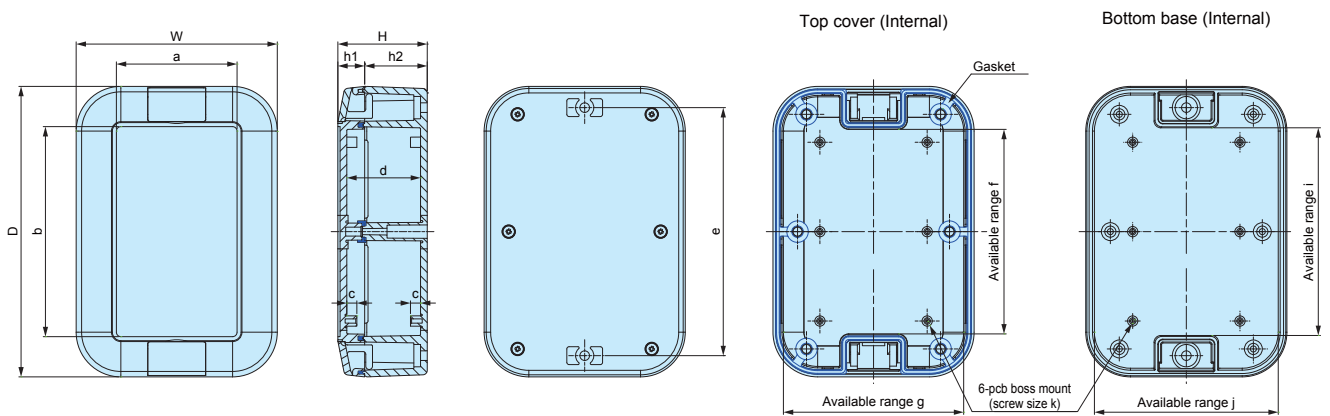
**WP dimensions**

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



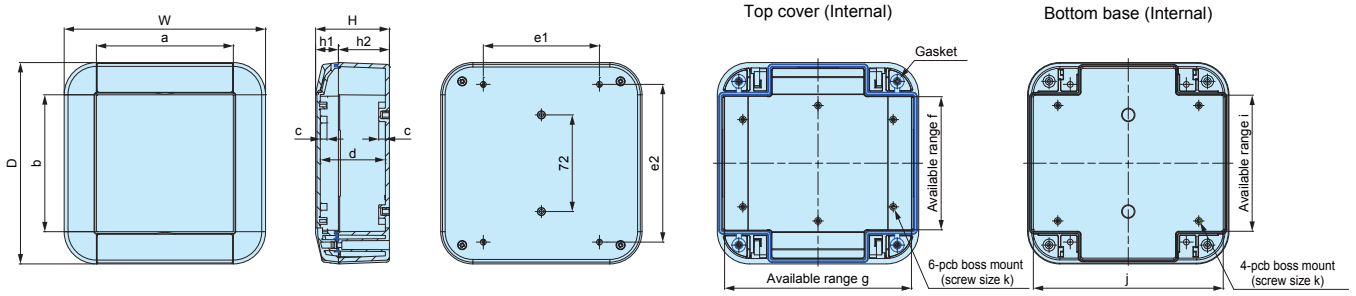
※Boss for PCB are located inside top covers of certain models. Detailed information available on DXF/DWG/PDF drawings.

Product no.	W	D	H	h1	h2	a	b	c	d	e	f	g	i	j	k
WP 5- 7-2	52	65	18	10	8	26.5	38.8	4	13	50.6	34.5	43.5	37	46	M2
WP 5- 7-3	52	65	27	10	17	26.5	38.8	4	22	50.8	34.5	43.5	36.5	45	M2
WP 6- 8-2	60	80	20	10	10	34.5	53.8	4	14.7	65.8	50	51.5	52	53.5	M2
WP 6- 8-3	60	80	30	10	20	34.5	53.8	4	24.7	65.4	50	51.5	51	53	M2
WP 8- 8-2	75	75	22	10	12	49.5	48.8	4	16.4	60.6	44	66	42	67	M2
WP 8- 8-4	75	75	35	10	25	49.5	48.8	4	29.4	60.4	43	66	42	66	M2
WP 8-10-2	75	100	22	10	12	46	71	4	16	85.6	69	66	67	67	M2
WP 8-10-4	75	100	35	10	25	46	71	4	29	85.4	69	66	67	66	M2
WP10-10-3	100	100	25	12	13	63.8	63.7	4.5	18	81.2	60	89	61	90	M2.3
WP10-10-4	100	100	40	12	28	63.8	63.7	4.5	33	81	60	89	61	90	M2.3

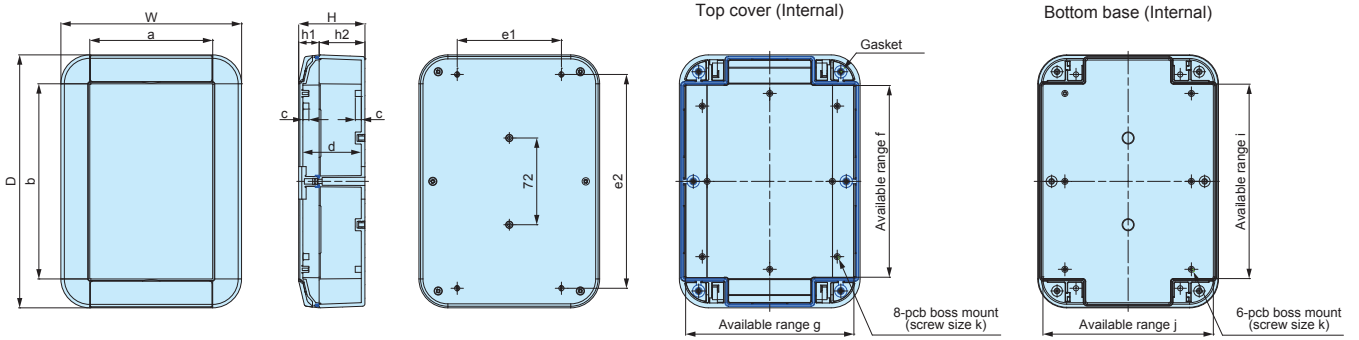


Product no.	W	D	H	h1	h2	a	b	c	d	e	f	g	i	j	k
WP 9-13-3	90	130	25	12	13	53.8	93.7	4.5	18	111.2	90	79	91	81	M2.3
WP 9-13-4	90	130	40	12	28	53.8	93.7	4.5	33	111	90	79	91	81	M2.3
WP11-15-3	110	150	27	12	15	73.7	113.5	4.5	20	131.2	110	99	110	100	M2.3
WP11-15-4	110	150	40	12	28	73.7	113.5	4.5	33	131	110	99	110	100	M2.3
WP13-18-3	130	175	30	12	18	93.8	138.8	4.5	23	156.2	136	120	135	120	M2.3
WP13-18-5	130	175	45	12	33	93.8	138.8	4.5	38	156.2	136	120	135	120	M2.3

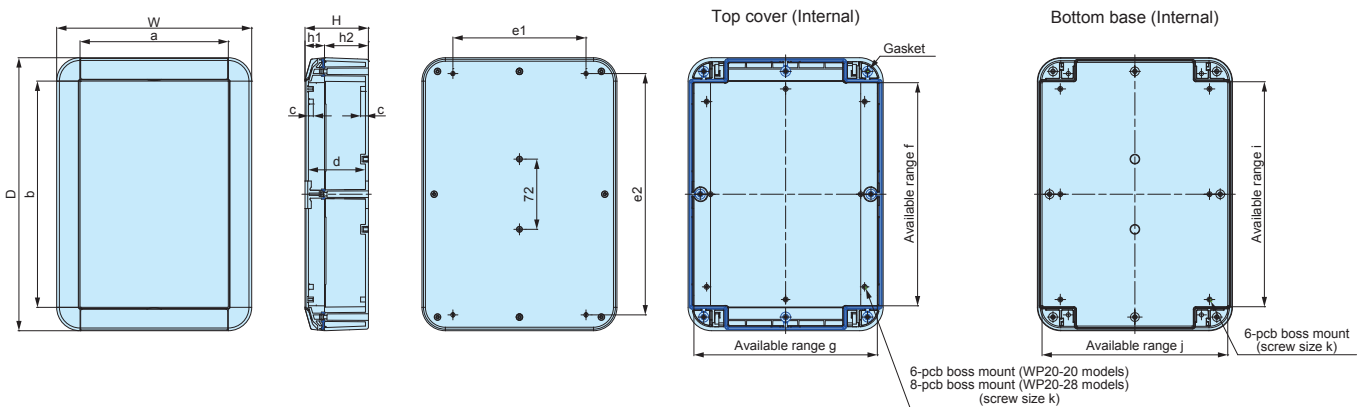




Product no.	W	D	H	h1	h2	a	b	c	d	e1	e2	f	g	i	j	k
WP15-15-4	150	150	40	17	23	102	102	5	33.5	86.5	117.5	99	139	100	141	M2.6
WP15-15-6	150	150	55	17	38	102	102	5	48.5	86.5	117.5	99	139	100	140	M2.6



Product no.	W	D	H	h1	h2	a	b	c	d	e1	e2	f	g	i	j	k
WP15-21-4	150	210	40	17	23	102	162	5	33.5	86.5	177.5	159	139	160	141	M2.6
WP15-21-6	150	210	55	17	38	102	162	5	48.5	86.5	177.5	159	139	160	140	M2.6



Product no.	W	D	H	h1	h2	a	b	c	d	e1	e2	f	g	i	j	k
WP20-20-5	200	200	45	20	25	152	152	5	38.5	136.5	167.5	148	187	150	190	M2.6
WP20-20-7	200	200	65	20	45	152	152	5	58.5	136.5	167.5	148	187	149	189	M2.6
WP20-28-5	200	280	45	20	25	152	232	5	38.5	136.5	247.5	227	187	230	190	M2.6
WP20-28-7	200	280	65	20	45	152	232	5	58.5	136.5	247.5	227	187	229	189	M2.6

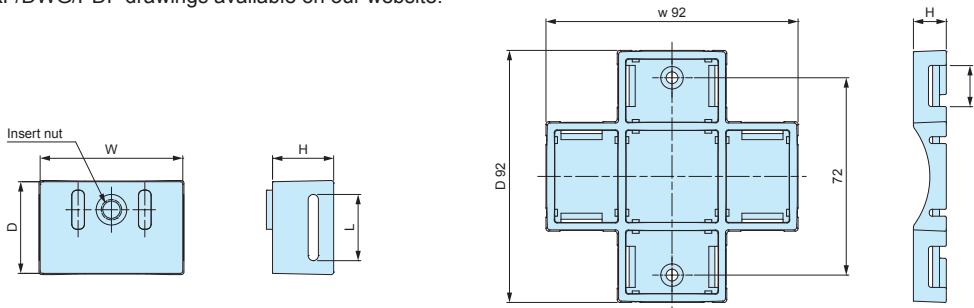
WPMB SERIES

POLE MOUNT BRACKET

← NEW SIZE



- 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 both for vertical and horizontal installation.
- Together with WPMB series, the PKB series mounting belt enables the unit to be mounted onto a pole.
- DXF/DWG/PDF drawings available on our website.



WPMB-M3 □ WPMB-M4

WPMB-M4-2

Color Type

Code	Color
G	White gray
D	Dark Gray

Product no. / Dimensions

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

Product no.	Dimensions				Material / Finish	Screw	Suitable enclosures	Recommended torque (N · m)	Weight (g)	Pack of
	W	D	H	L						
WPMB-M3 □	18	14	9.5	11	ASA UL94HB	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 (pair)
WPMB-M4 □	28	18	12	13	ASA UL94HB	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 (pair)
<b>NEW</b> WPMB-M4-2 □	92	92	12	13	ASA UL94HB	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.

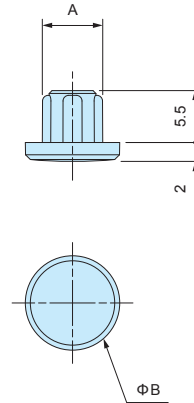
WPMB-M3/WPMB-M4

WPMB-M4-2



**PFRF SERIES**

**RUBBER FEET**



- Recommended to be used with WP series as a desktop-type unit.
- No additional hole milling 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. / Dimensions**

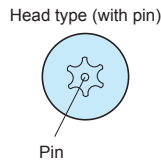
■ UL94HB

Product no.	Dimensions		Material	Color	Suitable enclosures	Pack of
	A	B				
PFRF-M2.5D	6.4	10	Elastomer UL94HB	Dark gray	WP models: 8-8-2 • 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	WP models: 15-15-4 • 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 for WP**

**NEW SIZE**



- 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. / Dimensions**

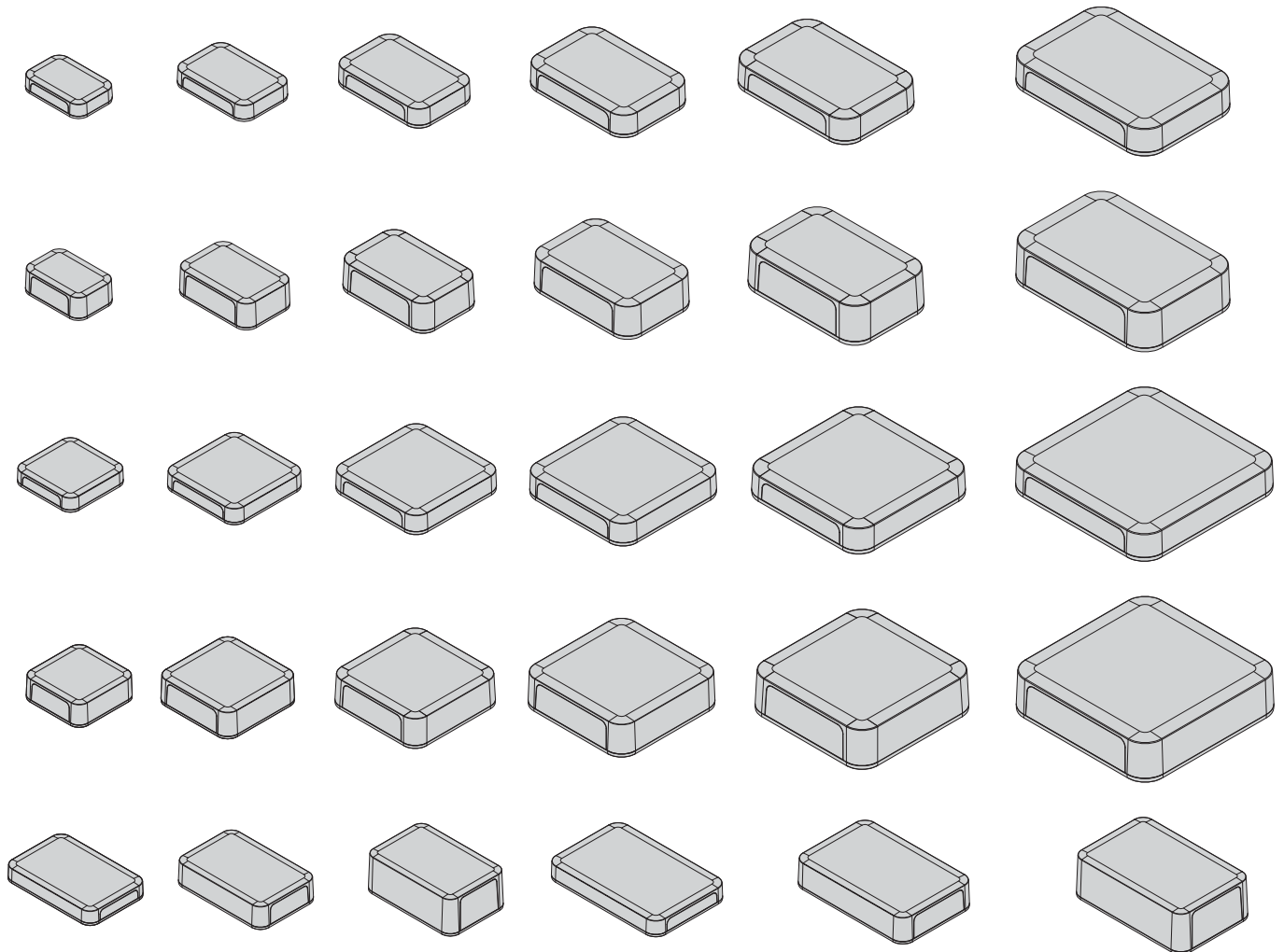
Product no.	Dimensions		TORX head no.	Material	Finish	Suitable enclosures	Pack of
	M	L					
MR2.5-8ST	2.5	8	T 8 (with pin)	Stainless steel	Unfinished	WP8-8-2 • 8-10-2 • 9-13-3 • 10-10-3 • 11-15-3 • 13-18-3 / WSC series	20
MR2.5-16ST	2.5	16	T 8 (with pin)	Stainless steel	Unfinished	WP8-8-4 • 8-10-4 • 9-13-4 • 10-10-4 • 11-15-4 • 13-18-5	20
<b>NEW</b> MR3-8ST	3	8	T10 (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

# PF SERIES FLAT NETWORK CASE

**Huge selection, 36 different sizes are now available.**

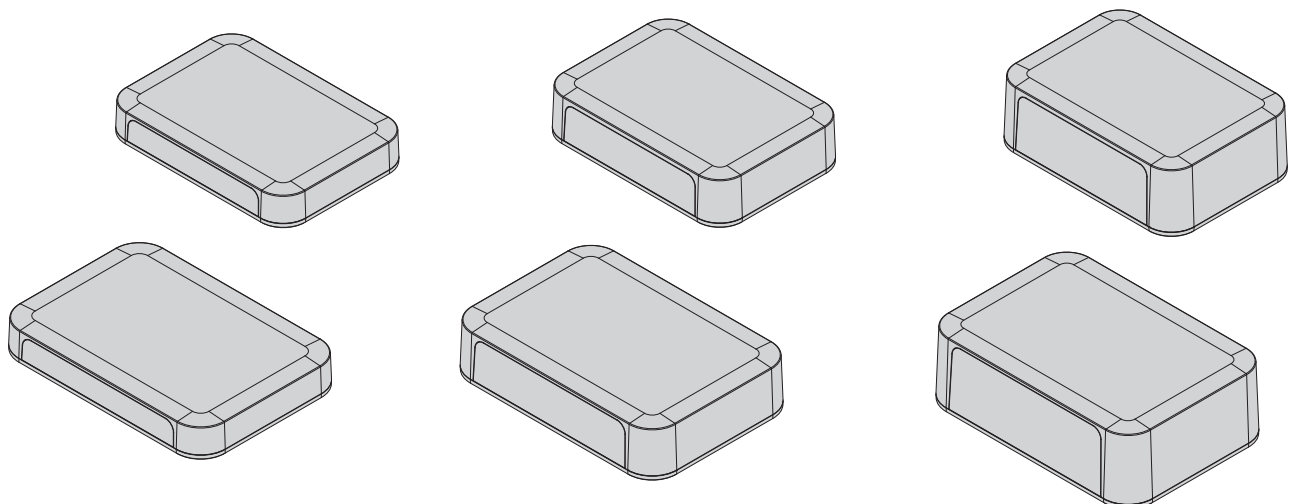
**Suitable for IOT device, Data transmitter and receiver, access point.**

From 100 x 67 x 22.5 to 320 x 225 x 100mm.



---

## New sizes



# APPLICATION EXAMPLE

## WiFi Access Point

Product by VNPT Technology (Vietnam)



## USB Power Charging Hub + Data Hub

Product by MtT-planning (Japan)



Possible to power charging while transferring data.

## USB HEMODYNAMIC RESEARCH DEVICE

Product by Cardiovascular Engineering (USA)



## WIRELESS HOME ELECTRONICS CONTROLLER

Product by AR SMART (Colombia)



## GSM MODULE

Product by Elmar Electronic (Croatia)



## ADVANCED TRIGGER STATION

Product by BrainTrends (Italy)



## G4 FLIGHT TRACKER

Product by Guardian Mobility (Canada)



## iCONSE-T IOT and SENSOR NETWORK TRAINING SYSTEM

Product by Benchmark Electronic Systems (India)

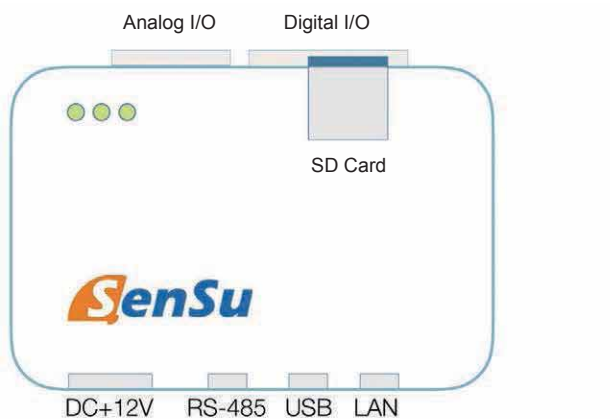


# "SenSu" COMMUNICATION UNIT with SENSOR

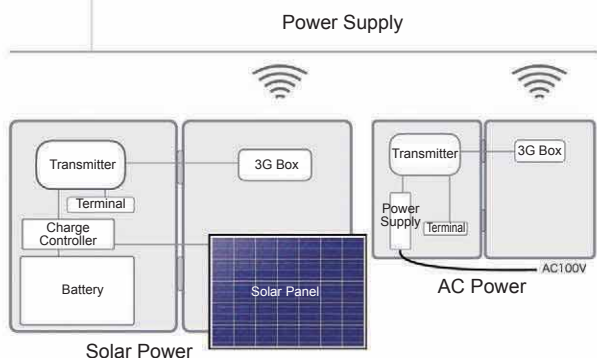
Product by DATA TECHNOLOGY (Japan)



Application Example for Agriculture  
Outdoor application with BCPC series Polycarbonate box.



Exclusive Interface



USB



LAN

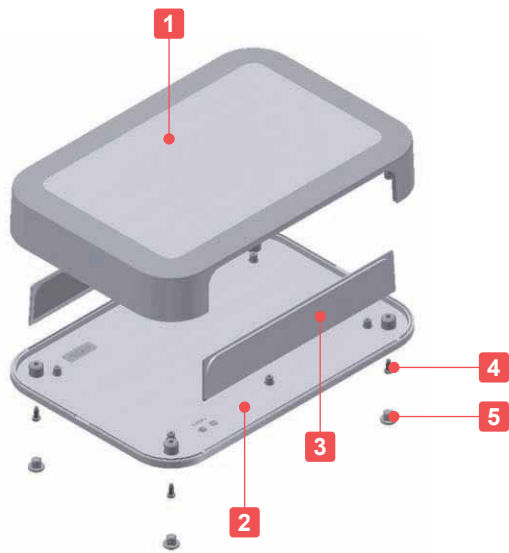


RS-485

# WIRELESS NETWORK DATA LOGGER

Product by SensingWinTech (Japan)





Technical Data
Protection class: IP40
Operating temperature: -10°C ~ +60°C

- Flat designed plastic case with detachable panels.
- Made of flame-resistant ABS UL94V-0, and available in off-white and dark gray color.
- 6 new sizes added for a total of 36 different sizes available for selection.
- Equipped with built-in bosses for PCB mounting.
- Suitable for Wi-Fi access point, measuring equipment, controller or various other applications for desktop, wall mounting use and so on.

Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS UL94V-0	Off-white • Dark gray
2	Bottom base	1	ABS UL94V-0	Off-white • Dark gray
3	Panel	2	ABS UL94V-0	Off-white • Dark gray
4	Self-tapping screw	4	Steel	Nickel plated
5	Rubber feet	4	Elastomer	Dark gray



Accessories (Optional parts)



Tapping standoff TPS series  
See page TPS · MT-1



PCB mounting screw EM series  
See page EM · MR-1



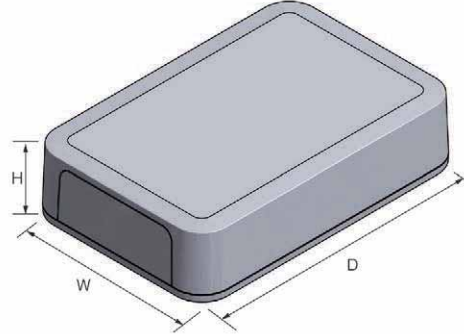
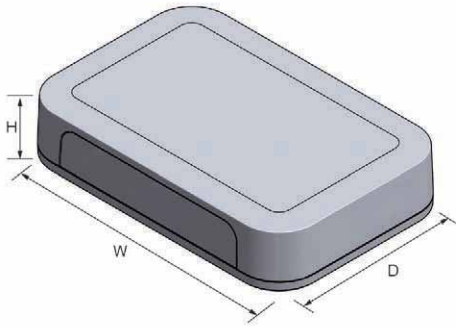
TORX screw MR series  
See page EM · MR-1



Suspension bracket WM series  
See page WM-1



Neodymium magnet NMG series  
See page NMG-1



Tilt leg TLW series  
See page TLW-1

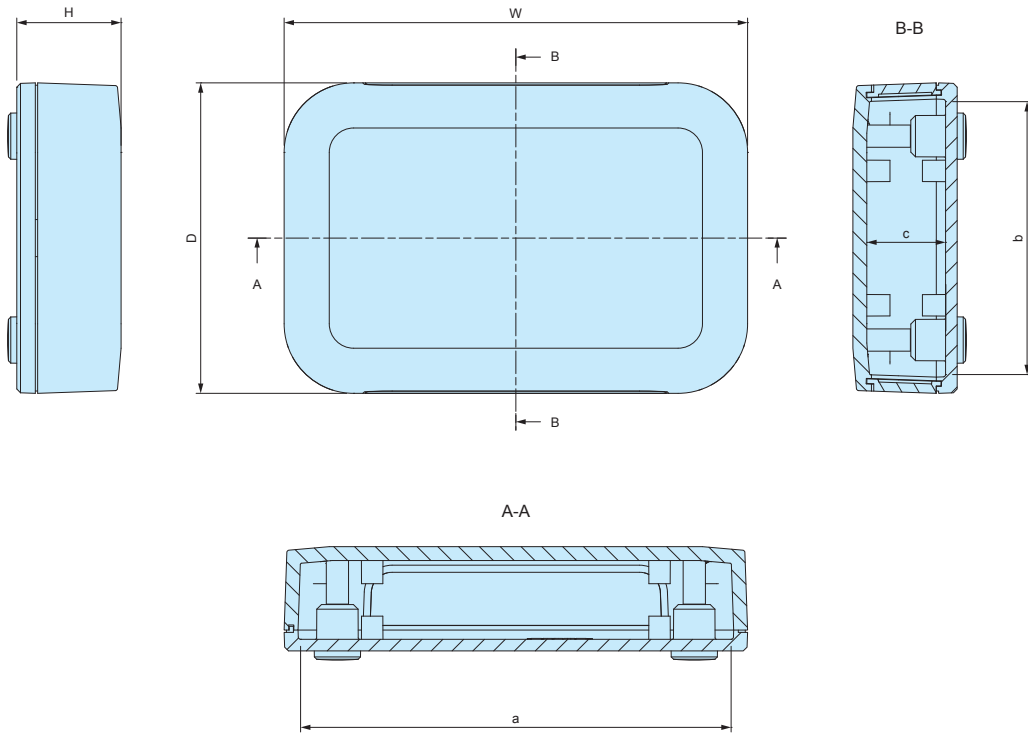
Product no. / Dimensions

※ H dimension is not inclusive of rubber feet. (Rubber feet height = 2mm)

Product no.		Dimensions			Screw	Weight (g)
● Off-white	● Dark gray	W	H	D		
PF10- 2- 7W	PF10- 2- 7D	100	22.5	67	M2.5-8 x 4 pcs	60
PF10- 2-10W	PF10- 2-10D	100	22.5	100	M2.5-8 x 4 pcs	82.9
PF10- 2-15W	PF10- 2-15D	100	22.5	150	M2.5-8 x 4 pcs	120.2
PF10- 4- 7W	PF10- 4- 7D	100	35	67	M2.5-8 x 4 pcs	65
PF10- 4-10W	PF10- 4-10D	100	35	100	M2.5-8 x 4 pcs	97.1
PF10- 4-15W	PF10- 4-15D	100	35	150	M2.5-8 x 4 pcs	132.6
PF10- 6-15W	PF10- 6-15D	100	55	150	M2.5-8 x 4 pcs	169.1
PF13- 3- 9W	PF13- 3- 9D	125	25	85	M2.5-8 x 4 pcs	90.8
PF13- 3-13W	PF13- 3-13D	125	25	125	M2.5-8 x 4 pcs	127.5
PF13- 3-19W	PF13- 3-19D	125	25	190	M2.5-8 x 4 pcs	186.8
PF13- 4- 9W	PF13- 4- 9D	125	40	85	M2.5-8 x 4 pcs	108.4
PF13- 4-13W	PF13- 4-13D	125	40	125	M2.5-8 x 4 pcs	151.4
PF13- 4-19W	PF13- 4-19D	125	40	190	M2.5-8 x 4 pcs	214.9
PF13- 6-19W	PF13- 6-19D	125	60	190	M2.5-8 x 4 pcs	250.4
PF15- 3-10W	PF15- 3-10D	150	30	100	M2.5-8 x 4 pcs	145.5
PF15- 3-15W	PF15- 3-15D	150	30	150	M2.5-8 x 4 pcs	207.5
PF15- 5-10W	PF15- 5-10D	150	45	100	M2.5-8 x 4 pcs	166
PF15- 5-15W	PF15- 5-15D	150	45	150	M2.5-8 x 4 pcs	233.5
PF18- 4-12W	PF18- 4-12D	175	35	120	M2.5-8 x 4 pcs	188.7
PF18- 4-18W	PF18- 4-18D	175	35	175	M2.5-8 x 4 pcs	266.8
PF18- 5-12W	PF18- 5-12D	175	50	120	M2.5-8 x 4 pcs	213.6
PF18- 5-18W	PF18- 5-18D	175	50	175	M2.5-8 x 4 pcs	302.1
PF20- 4-13W	PF20- 4-13D	200	40	135	M3-8 x 4 pcs	264
PF20- 4-20W	PF20- 4-20D	200	40	200	M3-8 x 4 pcs	368.5
PF20- 6-13W	PF20- 6-13D	200	60	135	M3-8 x 4 pcs	302.5
PF20- 6-20W	PF20- 6-20D	200	60	200	M3-8 x 4 pcs	417
PF24- 4-17W	PF24- 4-17D	240	42.5	165	M3-8 x 4 pcs	370.4
PF24- 4-24W	PF24- 4-24D	240	42.5	240	M3-8 x 4 pcs	521.4
PF24- 6-17W	PF24- 6-17D	240	60	165	M3-8 x 4 pcs	408.8
PF24- 6-24W	PF24- 6-24D	240	60	240	M3-8 x 4 pcs	568.7
<b>NEW</b> PF28- 5-20W	<b>NEW</b> PF28- 5-20D	280	45	200	M3-8 x 4 pcs	564.1
<b>NEW</b> PF28- 7-20W	<b>NEW</b> PF28- 7-20D	280	65	200	M3-8 x 4 pcs	618.4
<b>NEW</b> PF28- 9-20W	<b>NEW</b> PF28- 9-20D	280	90	200	M3-8 x 4 pcs	709.2
<b>NEW</b> PF32- 5-23W	<b>NEW</b> PF32- 5-23D	320	45	225	M3-8 x 4 pcs	697.1
<b>NEW</b> PF32- 7-23W	<b>NEW</b> PF32- 7-23D	320	70	225	M3-8 x 4 pcs	782.1
<b>NEW</b> PF32-10-23W	<b>NEW</b> PF32-10-23D	320	100	225	M3-8 x 4 pcs	899.8

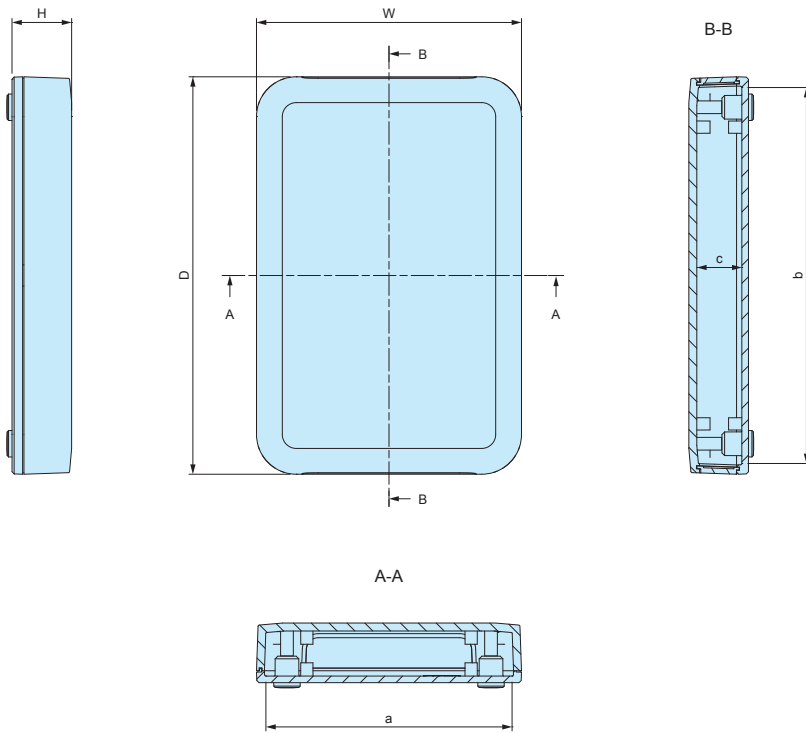
**PF dimensions**

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



※Refer to DXF/DWG/PDF drawings for the numbers of PCB bosses on each size of enclosures.

Product no.	W	H	D	a	b	c
PF10- 2- 7□	100	22.5	67	92	58	17
PF10- 2-10□	100	22.5	100	92	91	17
PF10- 4- 7□	100	35	67	91	57	29.5
PF10- 4-10□	100	35	100	91	90	29.5
PF13- 3- 9□	125	25	85	117	76	19.5
PF13- 3-13□	125	25	125	117	116	19.5
PF13- 4- 9□	125	40	85	116	75	34.5
PF13- 4-13□	125	40	125	116	115	34.5
PF15- 3-10□	150	30	100	142	90	24
PF15- 3-15□	150	30	150	142	140	24
PF15- 5-10□	150	45	100	141	89	39
PF15- 5-15□	150	45	150	141	139	39
PF18- 4-12□	175	35	120	166	110	29
PF18- 4-18□	175	35	175	166	165	29
PF18- 5-12□	175	50	120	165	109	44
PF18- 5-18□	175	50	175	165	164	44
PF20- 4-13□	200	40	135	191.5	124.5	34
PF20- 4-20□	200	40	200	191.5	189.5	34
PF20- 6-13□	200	60	135	190	123	54
PF20- 6-20□	200	60	200	190	188	54
PF24- 4-17□	240	42.5	165	230	154	36.5
PF24- 4-24□	240	42.5	240	230	229	36.5
PF24- 6-17□	240	60	165	229	153	54
PF24- 6-24□	240	60	240	229	228	54
PF28- 5-20□	280	45	200	269.5	189	38.5
PF28- 7-20□	280	65	200	268.5	187.5	58.5
PF28- 9-20□	280	90	200	266.5	185.5	83.5
PF32- 5-23□	320	45	225	309.5	214	38.5
PF32- 7-23□	320	70	225	308	212	63.5
PF32-10-23□	320	100	225	306	210	93.5

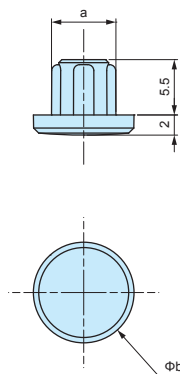


Product no.	W	H	D	a	b	c
PF10-2-15□	100	22.5	150	92	141	17
PF10-4-15□	100	35	150	91	140	29.5
PF10-6-15□	100	55	150	90	139	49.5
PF13-3-19□	125	25	190	117	181	19.5
PF13-4-19□	125	40	190	116	180	34.5
PF13-6-19□	125	60	190	115	179	54.5

**PFRF SERIES RUBBER FEET for PF**



- Rubber feet for PF series.
- Inserted into the screw holes on the underside of box.
- Elastomer material is resistant against color migration.



**Product no. / Dimensions**

Product no.	Dimensions		Suitable box	Material	Color	Pack of
	a	b				
PFRF-M2.5D	6.4	10	PF10-2-7,10-2-10,10-2-15,10-4-7,10-4-10,10-4-15 PF10-6-15,13-3-9,13-3-13,13-3-19,13-4-9,13-4-13 PF13-4-19,13-6-19,15-3-10,15-3-15,15-5-10,15-5-15 PF18-4-12,18-4-18,18-5-12,18-5-18	Elastomer	Dark gray	4
PFRF-M3D	7.2	11	PF20-4-13,20-4-20,20-6-13,20-6-20,24-4-17 PF24-4-24,24-6-17,24-6-24,28-5-20,28-7-20 PF28-9-20,32-5-23,32-7-23,32-10-23	Elastomer	Dark gray	4



EMC  
Shielding  
Effects



- PFE series is an EMC shielded version of the PF series network plastic box coated internally with DOTITE conductive paint (acrylic paint mixed with nickel filler).
- Flat designed plastic case with detachable panels.
- Made of flame-resistant ABS UL94V-0.
- Equipped with built-in bosses for PCB mounting.
- Suitable for Wi-Fi access point, measuring equipment, controller or various other applications for desktop, wall mounting use and so on.

**Technical Data**

Protection class: IP40  
Operating temperature: -10°C ~ +60°C

Included screws  
PFE20-4-13 model : M3-8 x 4 pcs  
PFE other models : M2.5-8 x 4 pcs

**Components**

No.	Part name	Pcs	Material	Color / Finish	Conductive paint
1	Top cover	1	ABS UL94V-0	Off-white	DOTITE
2	Bottom base	1	ABS UL94V-0	Off-white	DOTITE
3	Panel	2	ABS UL94V-0	Off-white	DOTITE
4	Self-tapping screw	4	Steel	Nickel plated	—
5	Rubber feet	4	Elastomer	Dark gray	—

**Accessories (Optional parts)**



Tapping standoff TPS series  
See page TPS • MT-1



PCB mounting screw EM series  
See page EM • MR-1



TORX screw MR series  
See page EM • MR-1



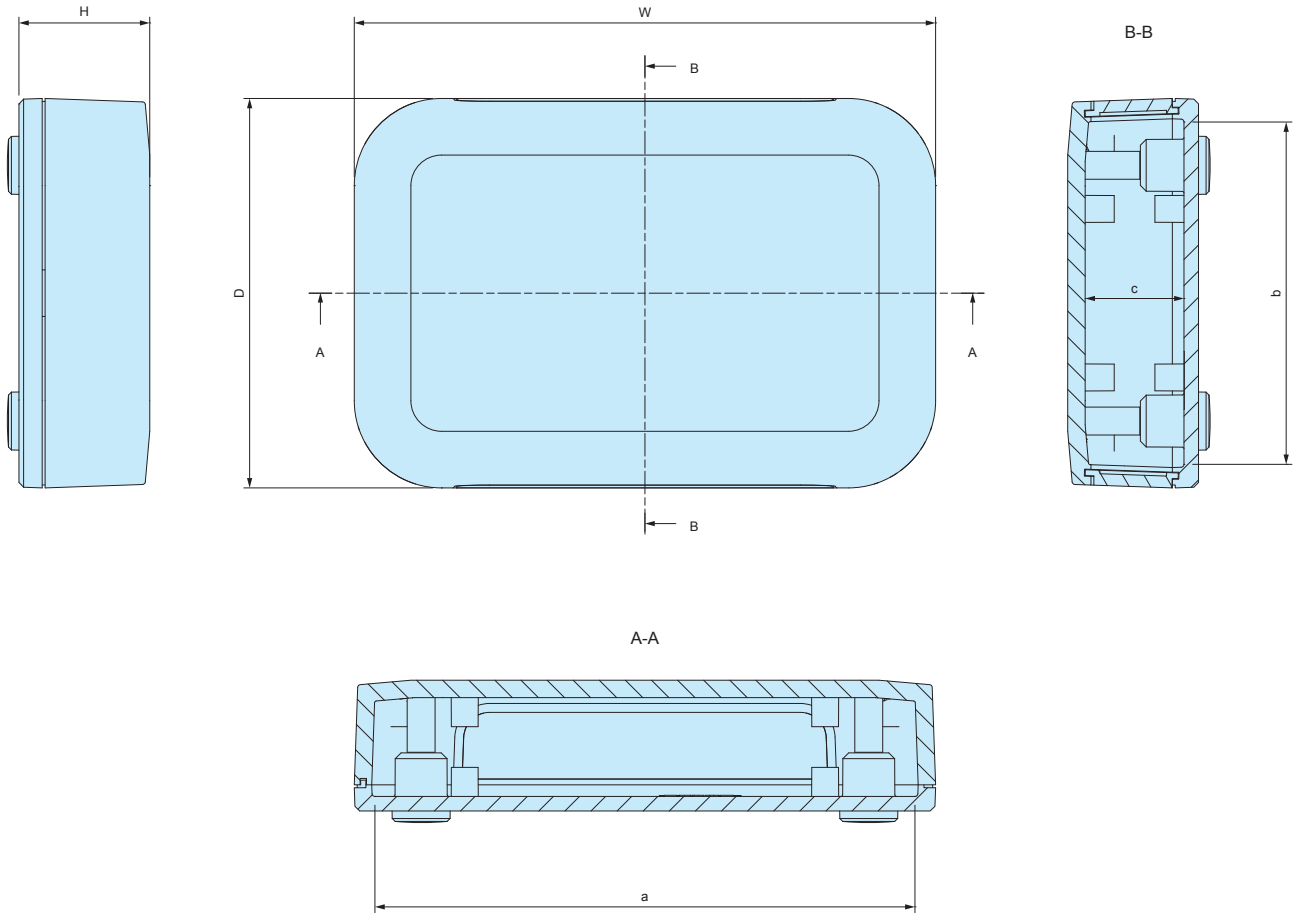
Suspension bracket WM series  
See page WM-1



Tilt leg TLW series  
See page TLW-1

PFE dimensions

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



※Refer to DXF/DWG/PDF drawings for the numbers of PCB bosses on each size of enclosures.

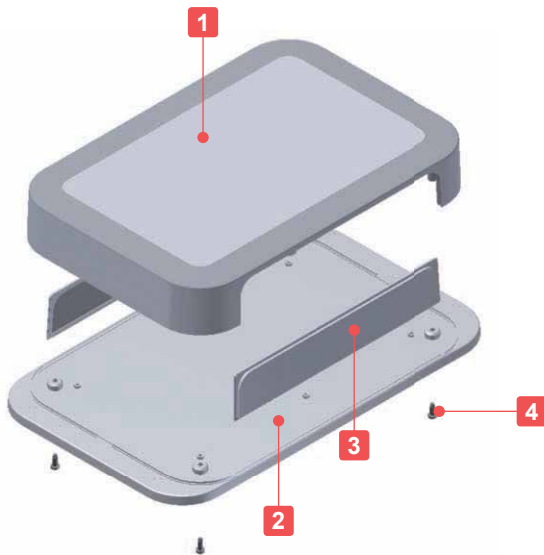
Product no. / Dimensions

Product no.	Dimensions						Screw	Weight (g)
	W	H	D	a	b	c		
<b>NEW</b> PFE13-4-9W	125	40	85	116	75	34.5	M2.5-8 x 4 pcs	114
<b>NEW</b> PFE15-3-10W	150	30	100	142	90	24	M2.5-8 x 4 pcs	152
<b>NEW</b> PFE15-5-15W	150	45	150	141	139	39	M2.5-8 x 4 pcs	244.5
<b>NEW</b> PFE20-4-13W	200	40	135	191.5	124.5	34	M3-8 x 4 pcs	274.5



**Technical Data**

Protection class: IP40  
 Operating temperature: -10°C ~ +60°C



- PF plastic case with wall mounting flange bottom design.
- Made of flame-resistant ABS UL94V-0 and available in off-white color.
- 6 new sizes added for a total of 30 different sizes available for selection.
- Equipped with built-in bosses for PCB mounting.
- Suitable for Wi-Fi access point, wireless LAN, HUB, controller or other applications.

**Components**

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS UL94V-0	Off-white
2	Flanged base	1	ABS UL94V-0	Off-white
3	Panel	2	ABS UL94V-0	Off-white
4	Self-tapping screw	4	Steel	Nickel plated

Accessories (Optional parts)



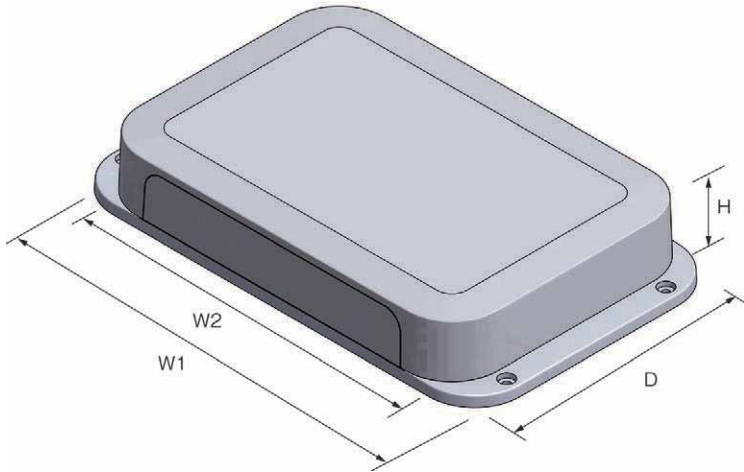
Tapping standoff TPS series  
See page TPS · MT-1



PCB mounting screw EM series  
See page EM · MR-1



TORX screw MR series  
See page EM · MR-1

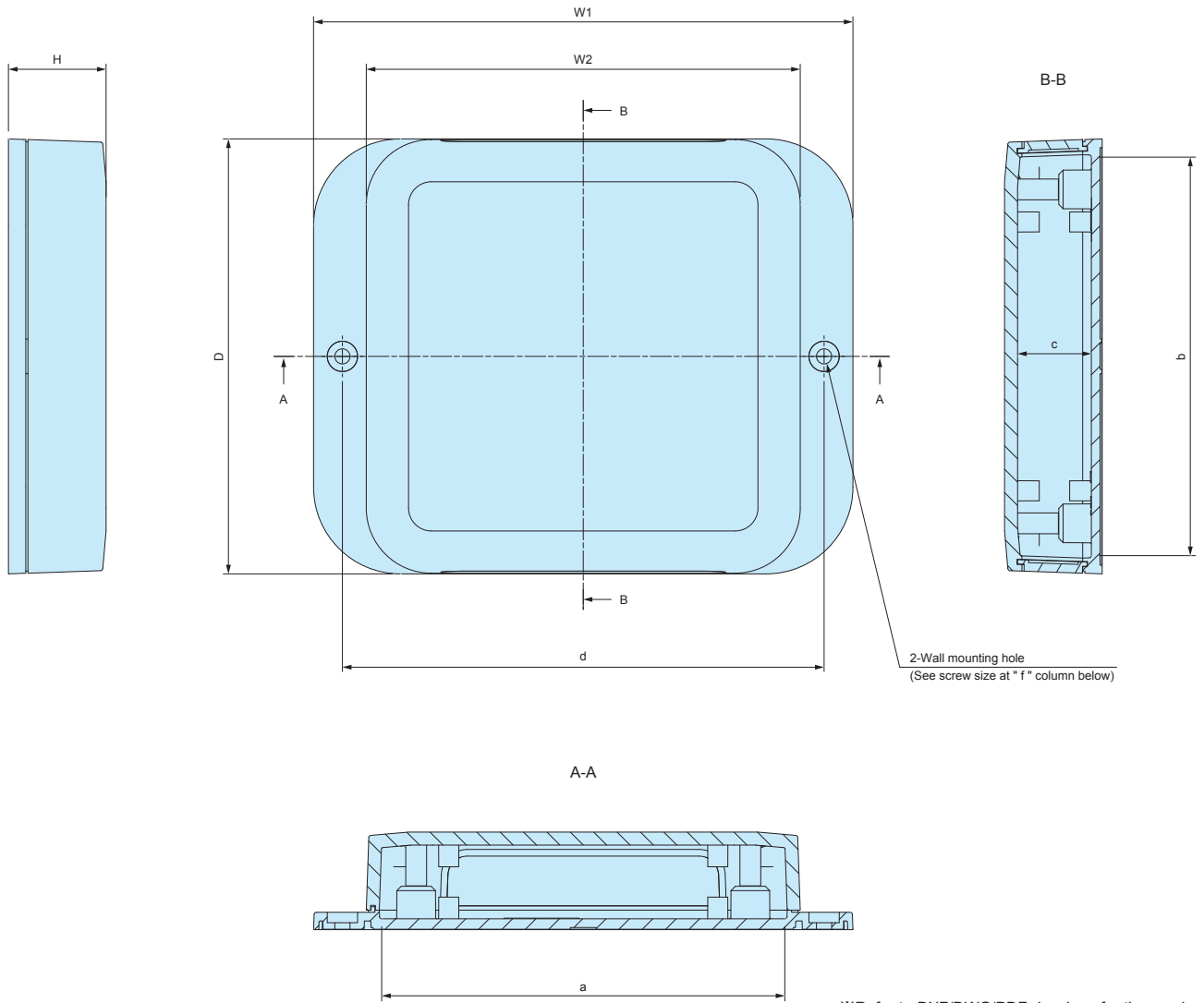


Product no. / Dimensions

Product no.	Dimensions				Screw	Weight (g)	
	● Off-white	W1	W2	H			D
PFF10- 2- 7W		124.3	100	22.5	67.3	M2.5-8 x 4 pcs	60.8
PFF10- 2-10W		124.3	100	22.5	100.3	M2.5-8 x 4 pcs	84.6
PFF10- 4- 7W		124.3	100	35	67.3	M2.5-8 x 4 pcs	72
PFF10- 4-10W		124.3	100	35	100.3	M2.5-8 x 4 pcs	99.1
PFF13- 3- 9W		149.3	125	25	85.3	M2.5-8 x 4 pcs	90.8
PFF13- 3-13W		155.3	125	25	125.3	M2.5-8 x 4 pcs	128.6
PFF13- 4- 9W		149.3	125	40	85.3	M2.5-8 x 4 pcs	108.4
PFF13- 4-13W		155.3	125	40	125.3	M2.5-8 x 4 pcs	152.3
PFF15- 3-10W		180.4	150	30	100.4	M2.5-8 x 4 pcs	145.2
PFF15- 3-15W		180.4	150	30	150.4	M2.5-8 x 4 pcs	211.3
PFF15- 5-10W		180.4	150	45	100.4	M2.5-8 x 4 pcs	168.6
PFF15- 5-15W		180.4	150	45	150.4	M2.5-8 x 4 pcs	235
PFF18- 4-12W		205.4	175	35	120.4	M2.5-8 x 4 pcs	192.1
PFF18- 4-18W		205.4	175	35	175.4	M2.5-8 x 4 pcs	209.8
PFF18- 5-12W		205.4	175	50	120.4	M2.5-8 x 4 pcs	215.8
PFF18- 5-18W		205.4	175	50	175.4	M2.5-8 x 4 pcs	299.7
PFF20- 4-13W		230.5	200	40	135.5	M3-8 x 4 pcs	267.7
PFF20- 4-20W		230.5	200	40	200.5	M3-8 x 4 pcs	376
PFF20- 6-13W		230.5	200	60	135.5	M3-8 x 4 pcs	309.7
PFF20- 6-20W		230.5	200	60	200.5	M3-8 x 4 pcs	422.9
PFF24- 4-17W		270.5	240	42.5	165.5	M3-8 x 4 pcs	366.9
PFF24- 4-24W		270.5	240	42.5	240.5	M3-8 x 4 pcs	513.5
PFF24- 6-17W		270.5	240	60	165.5	M3-8 x 4 pcs	403.8
PFF24- 6-24W		270.5	240	60	240.5	M3-8 x 4 pcs	560.8
<b>NEW</b> PFF28- 5-20W		310.5	280	45	200.5	M3-8 x 4 pcs	547.5
<b>NEW</b> PFF28- 7-20W		310.5	280	65	200.5	M3-8 x 4 pcs	606.6
<b>NEW</b> PFF28- 9-20W		310.5	280	90	200.5	M3-8 x 4 pcs	694.1
<b>NEW</b> PFF32- 5-23W		350.5	320	45	225.5	M3-8 x 4 pcs	679.9
<b>NEW</b> PFF32- 7-23W		350.5	320	70	225.5	M3-8 x 4 pcs	767.4
<b>NEW</b> PFF32-10-23W		350.5	320	100	225.5	M3-8 x 4 pcs	887.4

**PFF dimensions**

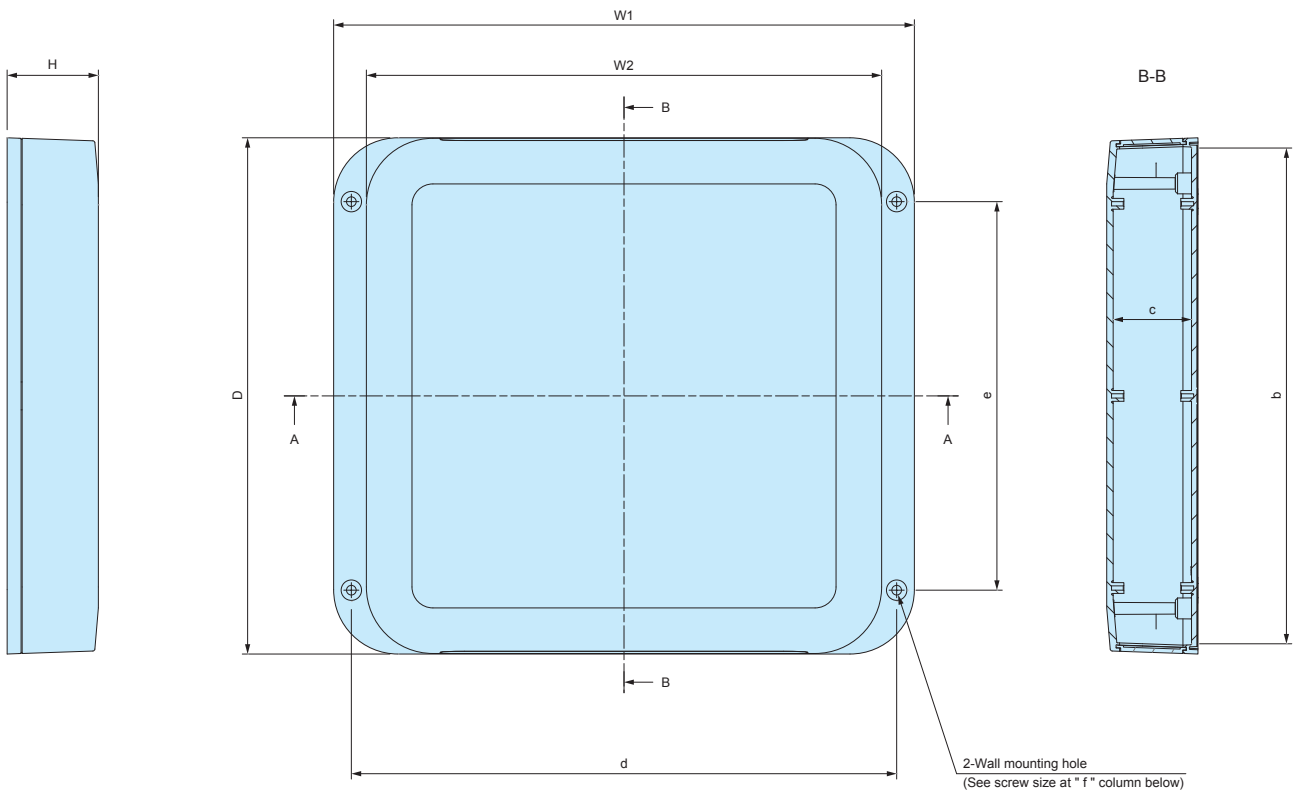
■ Drawings below are reference examples only.  
DXF/DWG/PDF drawings available on our website.



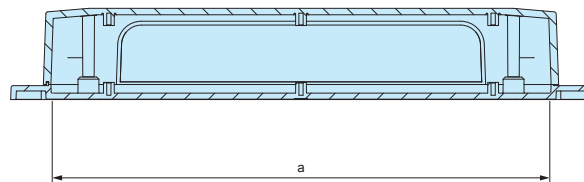
※Refer to DXF/DWG/PDF drawings for the numbers of PCB bosses on each size of enclosures.

Product no.	W1	W2	H	D	a	b	c	d	f
PFF10-2- 7W	124.3	100	22.5	67.3	92	58	17	111	M3
PFF10-2-10W	124.3	100	22.5	100.3	92	91	17	111	M3
PFF10-4- 7W	124.3	100	35	67.3	91	57	29.5	111	M3
PFF10-4-10W	124.3	100	35	100.3	91	90	29.5	111	M3
PFF13-3- 9W	149.3	125	25	85.3	117	76	19.5	136	M3
PFF13-3-13W	155.3	125	25	125.3	117	116	19.5	138.9	M4
PFF13-4- 9W	149.3	125	40	85.3	116	75	34.5	136	M3
PFF13-4-13W	155.3	125	40	125.3	116	115	34.5	138.9	M4
PFF15-3-10W	180.4	150	30	100.4	142	90	24	164	M4
PFF15-3-15W	180.4	150	30	150.4	142	140	24	164	M4
PFF15-5-10W	180.4	150	45	100.4	141	89	39	164	M4
PFF15-5-15W	180.4	150	45	150.4	141	139	39	164	M4
PFF18-4-12W	205.4	175	35	120.4	166	110	29	189	M4
PFF18-5-12W	205.4	175	50	120.4	165	109	44	189	M4
PFF20-4-13W	230.5	200	40	135.5	191.5	124.5	34	214	M4
PFF20-6-13W	230.5	200	60	135.5	190	123	54	214	M4





A-A



※Refer to DXF/DWG/PDF drawings for the numbers of PCB bosses on each size of enclosures.

Product no.	W1	W2	H	D	a	b	c	d	e	f
PFF18- 4-18W	205.4	175	35	175.4	166	165	29	189	130	M4
PFF18- 5-18W	205.4	175	50	175.4	165	164	44	189	130	M4
PFF20- 4-20W	230.5	200	40	200.5	191.5	189.5	34	214	145	M4
PFF20- 6-20W	230.5	200	60	200.5	190	188	54	214	145	M4
PFF24- 4-17W	270.5	240	42.5	165.5	230	154	36.5	254	106	M4
PFF24- 6-17W	270.5	240	60	165.5	229	153	54	254	106	M4
PFF24- 4-24W	270.5	240	42.5	240.5	230	229	36.5	254	181	M4
PFF24- 6-24W	270.5	240	60	240.5	229	228	54	254	181	M4
PFF28- 5-20W	310.5	280	45	200.5	269.5	189	38.5	293.5	137	M4
PFF28- 7-20W	310.5	280	65	200.5	268.5	187.5	58.5	293.5	137	M4
PFF28- 9-20W	310.5	280	90	200.5	266.5	185.5	83.5	293.5	137	M4
PFF32- 5-23W	350.5	320	45	225.5	309.5	214	38.5	333.5	152	M4
PFF32- 7-23W	350.5	320	70	225.5	308	212	63.5	333.5	152	M4
PFF32-10-23W	350.5	320	100	225.5	306	210	93.5	333.5	152	M4

# TWF SERIES

## PLASTIC ENCLOSURE with WALL MOUNTING FLANGE

Multi-purpose flanged enclosure designed for use as a wall-mounted device/terminal.

23 different sizes in 2 colors available.

Recommended to be used as measurement instruments, wireless communication gadgets, controller devices and so on.

## APPLICATION EXAMPLE

### SOLAR POWER SYSTEM REMOTE MONITOR

Product by Wave Energy Inc. (Japan)



### SOLAR PANEL CHARGE CONTROLLER

Product by SunWorks Inc. (UK)



### WIRELESS RFID TAG SEARCH DEVICE

Product by MULTILUX (Slovenia)



### RFID TAG

Utilization of TAKACHI PS-65W portable plastic case.



### CO<sub>2</sub> SENSOR



### TEMPERATURE · HUMIDITY SENSOR



Product by HANERON (Japan)

**REMOTE POWER CONTROL UNIT**



Product by M.C.S (Japan)

**COMMUNICATION CONVERTER**

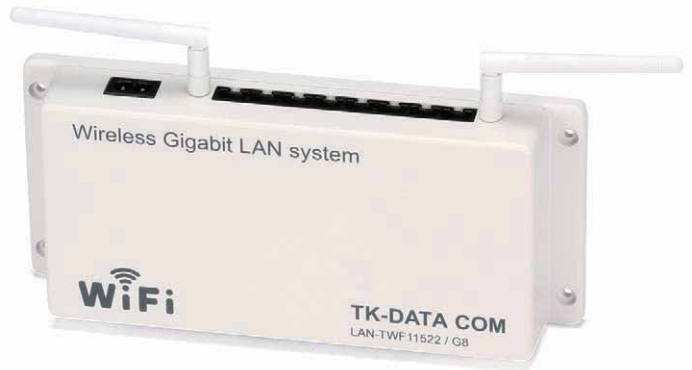


**ROOF SPRINKLER CONTROLLER**

Product by ES-Waternet (Japan)



**WiFi ACCESS POINT**



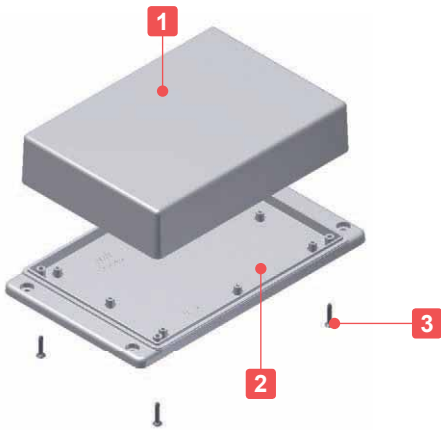
**ANALOG CAMERA M2M SOLUTION**

Product by ADVALY SYSTEM (Japan)





Technical Data
Protection class: IP40
Operating temperature: -10°C ~ +60°C



- Multi-purpose flanged enclosure designed for use as a wall-mounted device/terminal.
- 23 different sizes in 2 colors. Made of ABS UL94V-0.
- Equipped with screwing bosses for PCB.
- Recommended to be used as measurement instruments, wireless communication gadgets, controller devices and so on.

**Components**

No.	Part name	Pcs	Material	Color / Finish
1	Cover	1	ABS UL94V-0	Off-white • Dark gray
2	Flanged base	1	ABS UL94V-0	Off-white • Dark gray
3	Self tapping screw	2/4	Steel	Nickel plated • Black trivalent chromate

**Accessories (Optional parts)**



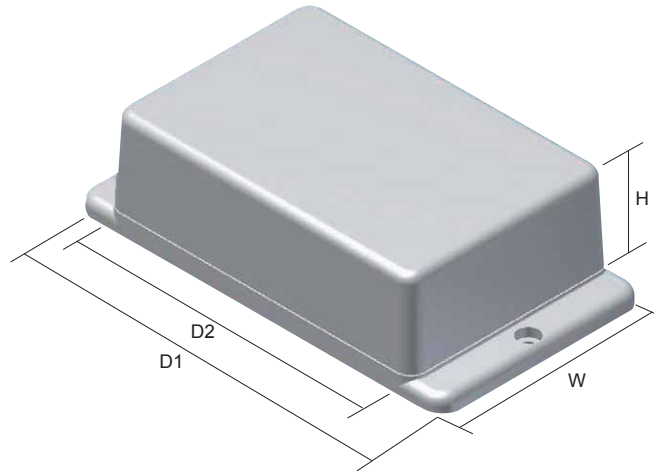
Tapping standoff TPS series  
See page TPS • MT-1



PCB mounting screw EM-2.3  
See page EM • MR-1



TORX screw MR series  
See page EM • MR-1



### Color Type

Code	Cover	Flanged base	Screw
W	Off-white	Off-white	Nickel plated
D	Dark gray	Dark gray	Black trivalent chromate

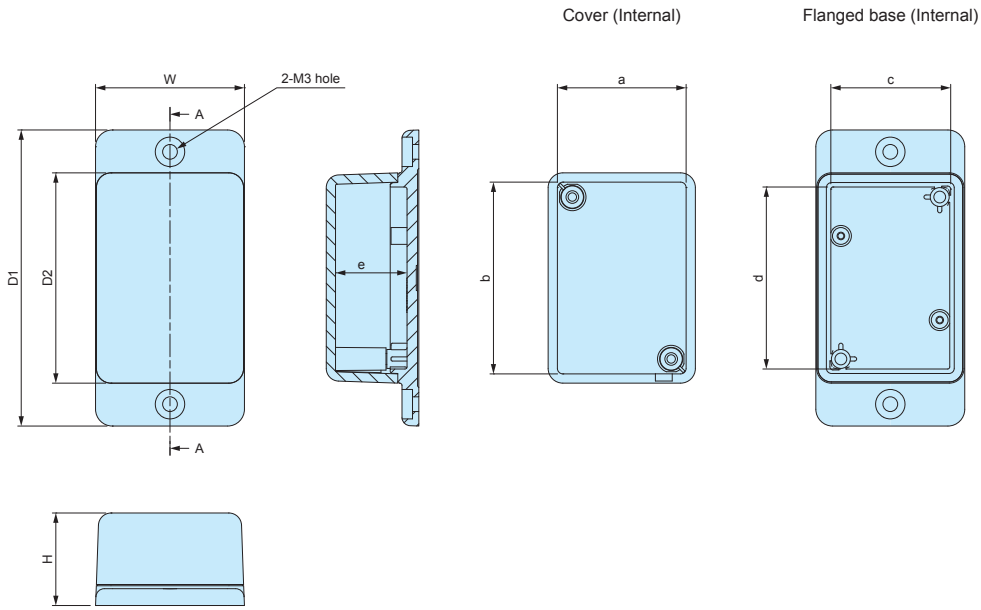
### Product no. / Dimensions

Product no.		Dimensions				UL class	Screw	Weight (g)
● Off-white	● Dark gray	W	H	D1 (Flanged base)	D2 (Cover)			
TWF 4-2- 5W	TWF 4-2- 5D	35.4	22	70.4	50	UL94V-0	M 2.6×12 2 pcs	19.7
TWF 5-2- 5W	TWF 5-2- 5D	50.4	17	70.4	50	UL94V-0	M 2.6×12 4 pcs	21.5
TWF 5-2- 7W	TWF 5-2- 7D	50.4	17	90.4	70	UL94V-0	M 2.6×12 4 pcs	29
TWF 5-3- 5W	TWF 5-3- 5D	50.4	27	70.4	50	UL94V-0	M 2.6×12 4 pcs	26.5
TWF 5-3- 7W	TWF 5-3- 7D	50.4	29.5	90.4	70	UL94V-0	M 2.6×12 4 pcs	36
TWF 5-3- 9W	TWF 5-3- 9D	45.6	27.5	111	90	UL94V-0	M 2.6×12 4 pcs	43
TWF 5-4- 7W	TWF 5-4- 7D	50.4	42	90.4	70	UL94V-0	M 2.6×12 4 pcs	43.5
TWF 7-2-11W	TWF 7-2-11D	70.6	20.5	127	105	UL94V-0	M 2.6×14 4 pcs	66.5
TWF 7-3-13W	TWF 7-3-13D	65.5	25.5	150	130	UL94V-0	M 3×16 4 pcs	87
TWF 7-4-11W	TWF 7-4-11D	70.6	35.5	127	105	UL94V-0	M 2.6×14 4 pcs	82
TWF 7-5-11W	TWF 7-5-11D	70.6	50.5	127	105	UL94V-0	M 2.6×14 4 pcs	96.5
TWF 7-5-13W	TWF 7-5-13D	65.5	50	150	130	UL94V-0	M 3×16 4 pcs	114
TWF 8-2- 8W	TWF 8-2- 8D	80.6	23.5	100.6	80	UL94V-0	M 2.6×14 4 pcs	62
TWF 8-4- 8W	TWF 8-4- 8D	80.6	43.5	100.6	80	UL94V-0	M 2.6×14 4 pcs	82
TWF 9-4-17W	TWF 9-4-17D	86	35	190	170	UL94V-0	M 3×16 4 pcs	150
TWF 9-6-17W	TWF 9-6-17D	86	60	190	170	UL94V-0	M 3×16 4 pcs	184
TWF11-5-22W	TWF11-5-22D	110.3	45	250.6	220	UL94V-0	M 3×16 4 pcs	250
TWF11-8-22W	TWF11-8-22D	110.3	75	250.6	220	UL94V-0	M 3×16 4 pcs	303
TWF13-3-13W	TWF13-3-13D	125.6	25	155.6	125	UL94V-0	M 3×16 4 pcs	155
TWF13-3-18W	TWF13-3-18D	125.6	25	205.6	175	UL94V-0	M 3×16 4 pcs	199
TWF13-5-13W	TWF13-5-13D	125.6	45	155.6	125	UL94V-0	M 3×16 4 pcs	189
TWF13-5-18W	TWF13-5-18D	125.6	45	205.6	175	UL94V-0	M 3×16 4 pcs	242
TWF13-7-18W	TWF13-7-18D	125.6	65	205.6	175	UL94V-0	M 3×16 4 pcs	281

**TWF dimensions**

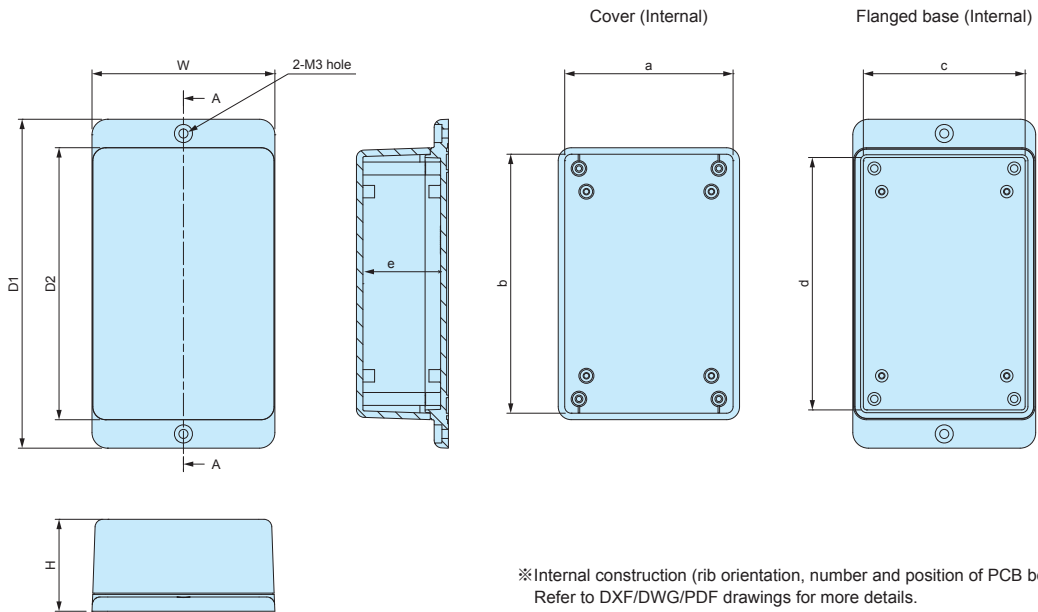
■ Drawings below are reference examples only.  
DXF/DWG/PDF drawings available on our website.

TWF4-2-5



Product no.	W	H	D1	D2	a	b	c	d	e
TWF4-2-5□	35.4	22	70.4	50	28.9	43.9	27.2	42.2	17

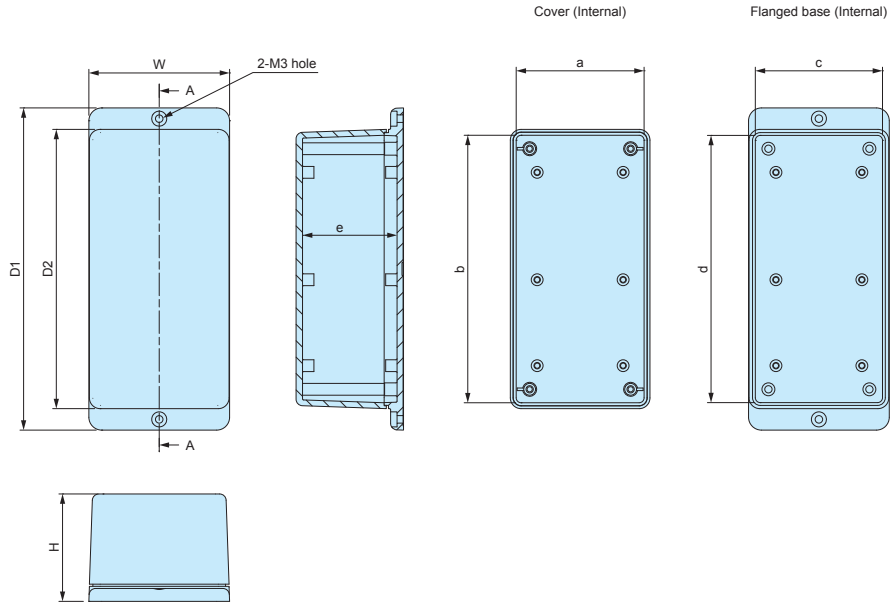
TWF5-2-5 • TWF5-3-5 • TWF5-2-7 • TWF5-3-7 • TWF5-4-7 • TWF5-3-9  
TWF7-2-11 • TWF7-4-11 • TWF7-5-11 • TWF8-2-8 • TWF8-4-8



※ Internal construction (rib orientation, number and position of PCB bosses) vary by model.  
Refer to DXF/DWG/PDF drawings for more details.

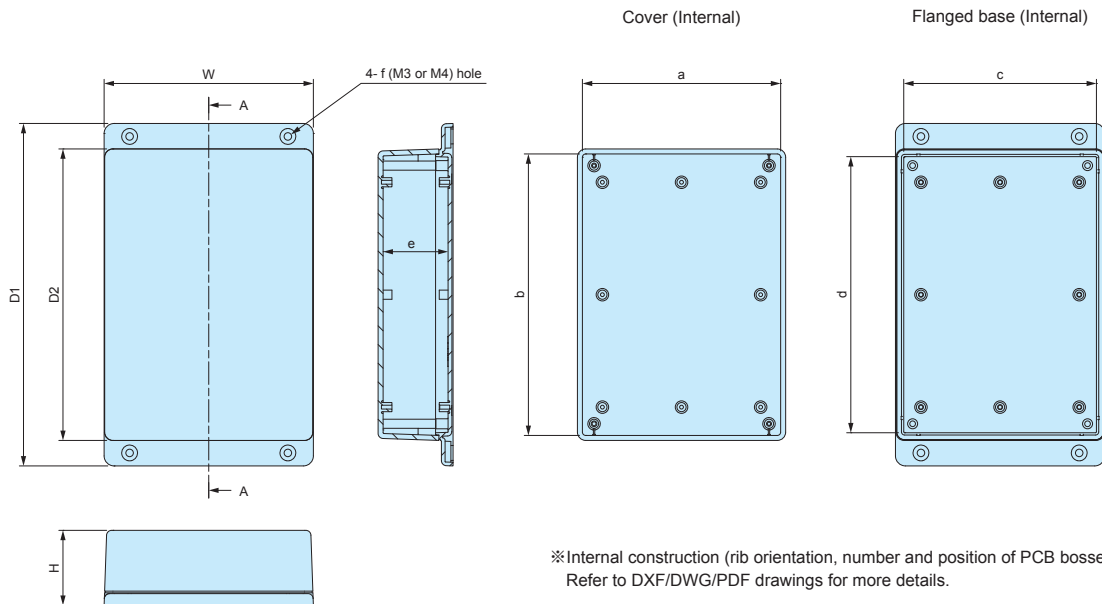
Product no.	W	H	D1	D2	a	b	c	d	e
TWF5-2- 5□	50.4	17	70.4	50	44.3	44.3	42.7	42.7	12
TWF5-3- 5□	50.4	27	70.4	50	43.6	43.6	42.7	42.7	22
TWF5-2- 7□	50.4	17	90.4	70	44.3	64.3	43.1	63.1	12
TWF5-3- 7□	50.4	29.5	90.4	70	43.4	63.4	43.1	63.1	24.5
TWF5-4- 7□	50.4	42	90.4	70	42.5	62.5	43.1	63.1	37
TWF5-3- 9□	45.6	27.5	111	90	37.3	82.3	37.2	82.2	22.5
TWF7-2-11□	70.6	20.5	127	105	63.2	98.2	61.4	96.4	15
TWF7-4-11□	70.6	35.5	127	105	62.2	97.2	61.4	96.4	30
TWF7-5-11□	70.6	50.5	127	105	61.1	96.1	61.4	96.4	45
TWF8-2- 8□	80.6	23.5	100.6	80	73	73	71.5	71.5	18
TWF8-4- 8□	80.6	43.5	100.6	80	71.6	71.6	71.5	71.5	38

TWF7-3-13  
TWF7-5-13



Product no.	W	H	D1	D2	a	b	c	d	e
TWF7-3-13□	65.5	25.5	150	130	57.7	122.7	59.2	124.4	19.5
TWF7-5-13□	65.5	50	150	130	55.9	120.9	59.2	124.4	44

TWF9-4-17 • TWF9-6-17 • TWF11-5-22 • TWF11-8-22  
TWF13-3-13 • TWF13-5-13 • TWF13-3-18 • TWF13-5-18 • TWF13-7-18



※Internal construction (rib orientation, number and position of PCB bosses) vary by model.  
Refer to DXF/DWG/PDF drawings for more details.

Product no.	W	H	D1	D2	a	b	c	d	e	f
TWF 9-4-17□	86	35	190	170	77.1	162	78.2	162.7	29	M3
TWF 9-6-17□	86	60	190	170	75.7	160.2	78.2	162.7	54	M3
TWF11-5-22□	110.3	45	250.6	220	101.4	211.4	103	213	39	M4
TWF11-8-22□	110.3	75	250.6	220	99.3	209.3	103	213	69	M4
TWF13-3-13□	125.6	25	155.6	125	117.2	117.2	114.5	114.5	19	M4
TWF13-5-13□	125.6	45	155.6	125	115.8	115.8	114.5	114.5	39	M4
TWF13-3-18□	125.6	25	205.6	175	117	167	114.5	164.6	19	M4
TWF13-5-18□	125.6	45	205.6	175	115.6	165.6	114.5	164.6	39	M4
TWF13-7-18□	125.6	65	205.6	175	114.2	164.2	114.5	164.6	59	M4

# TWS SERIES

## PLASTIC ENCLOSURE with SILICONE PROTECTOR

Universal plastic enclosure with protective silicone protectors which functions both as an anti-slip grip and impact protection. Available in 11 sizes and selectable in 18 different color combinations. Suitable for measuring instruments, wireless communication devices, portable controller, data logger, and so on.

## APPLICATION EXAMPLE

### DIGITAL POWER AMPLIFIER Product by Dream Co., Ltd. (Japan)



### GPS DATA LOGGER Product by Reds Fixit Shop (USA)



### 6 CHANNEL DATA LOGGER Product by Irisense Limited (UK)



### WIRELESS GATEWAY Product by Bresimar Automação (Portugal)





**SOLAR ARRAY TESTER** Product by System JD (Japan)



**SOLAR CELL BYPASS DIODE CHECKER** Product by Nippon Kernel System (Japan)



**SOLAR PANEL PV RESISTANCE CHECKER** Product by Shin-ei Electronic Measuring (Japan)



**VIBROMETER** Product by Sigma Electronics (Japan)

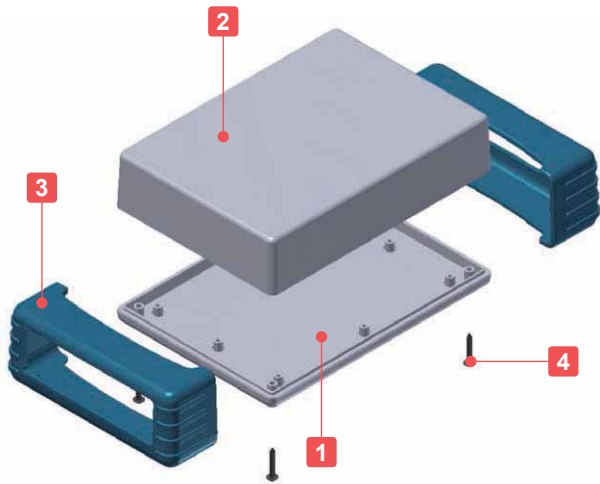


# TWS SERIES

# PLASTIC ENCLOSURE with SILICONE PROTECTOR



Technical Data
Protection class: IP40
Operating temperature: -10°C ~ +60°C



- Universal plastic enclosure with protective silicone protectors which functions both as an anti-slip grip and impact protection.
- Available in 11 sizes and selectable in 18 different color combinations.
- Enclosure is in B (Black), G (Light gray), and W (Off-white) model (off-white color type uses ABS UL94V-0 material).
- Plastic case and protective silicone with screw fastening.

### Components

No.	Part name	Pcs	Material : Color / Finish
1	Cover	1	ABS UL94HB : Black • Light gray - ABS UL94V-0 : Off-white
2	Bottom base	1	ABS UL94HB : Black • Light gray - ABS UL94V-0 : Off-white
3	Silicone protector	2	Silicone : Pink • Yellow • Green • Navy • Light gray • Black
4	Self tapping screw	4	Steel M3-20 / Black trivalent chromate

### Accessories (Optional parts)



Snap-in battery box LD • LDN series  
See page LD • LDN-1 ~ LD • LDN-2



Tapping standoff TPS series  
See page TPS • MT-1



PCB mounting screw EM series  
See page EM • MR-1

Color Type

Code	B P Black / Pink	B Y Black / Yellow	B G Black / Green	B N Black / Navy	B L Black / Light gray	B B Black / Black
Color						
Code	G P Light gray / Pink	G Y Light gray / Yellow	G G Light gray / Green	G N Light gray / Navy	G L Light gray / Light gray	G B Light gray / Black
Color						
Code	W P Off-white / Pink	W Y Off-white / Yellow	W G Off-white / Green	W N Off-white / Navy	W L Off-white / Light gray	W B Off-white / Black
Color						

■ Note: Enclosure material varies depending on color. Black and Light gray are ABS UL94HB; Off-white is ABS UL94V-0.

ABS UL94HB (Black • Light gray enclosure)

Product no. / Dimensions

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

Product no.	W	H	D	Plastic case material	Weight (g)
TWS 7-3-13□□	71(65)	32(25.6)	136(130)	ABS UL94HB	117
TWS 7-5-13□□	71(65)	56(50.1)	136(130)	ABS UL94HB	147.5
TWS 9-4-17□□	91.5(85.5)	41.5(35.5)	176(170)	ABS UL94HB	193
TWS 9-6-17□□	91.5(85.5)	66.5(60.5)	176(170)	ABS UL94HB	243
TWS11-5-22□□	116(110)	51.5(45.3)	226(220)	ABS UL94HB	325.5
TWS11-8-22□□	116(110)	81.5(75.3)	226(220)	ABS UL94HB	399
TWS13-3-13□□	131(125)	31(25)	131(125)	ABS UL94HB	222
TWS13-5-13□□	131(125)	51(45)	131(125)	ABS UL94HB	269.5
TWS13-3-18□□	131(125)	31(25)	181(175)	ABS UL94HB	271.5
TWS13-5-18□□	131(125)	51(45)	181(175)	ABS UL94HB	322
TWS13-7-18□□	131(125)	71(65)	181(175)	ABS UL94HB	371

■ ( ) value = enclosure dimension.

ABS UL94V-0 (Off-white enclosure)

Product no. / Dimensions

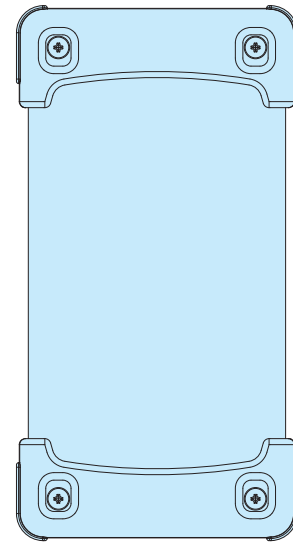
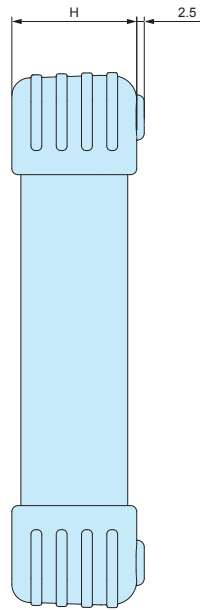
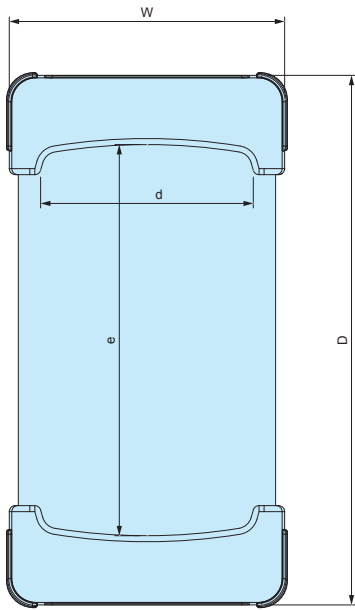
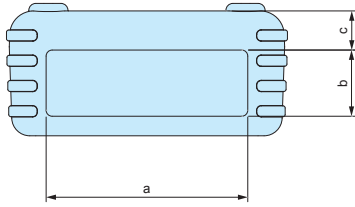
■ Please suffix color code at the end of the product number.

Product no.	W	H	D	Plastic case material	Weight (g)
TWS 7-3-13W□	71(65)	32(25.6)	136(130)	ABS UL94V-0	126
TWS 7-5-13W□	71(65)	56(50.1)	136(130)	ABS UL94V-0	163
TWS 9-4-17W□	91.5(85.5)	41.5(35.5)	176(170)	ABS UL94V-0	211
TWS 9-6-17W□	91.5(85.5)	66.5(60.5)	176(170)	ABS UL94V-0	266
TWS11-5-22W□	116(110)	51.5(45.3)	226(220)	ABS UL94V-0	356.5
TWS11-8-22W□	116(110)	81.5(75.3)	226(220)	ABS UL94V-0	438
TWS13-3-13W□	131(125)	31(25)	131(125)	ABS UL94V-0	243.5
TWS13-5-13W□	131(125)	51(45)	131(125)	ABS UL94V-0	294
TWS13-3-18W□	131(125)	31(25)	181(175)	ABS UL94V-0	293.5
TWS13-5-18W□	131(125)	51(45)	181(175)	ABS UL94V-0	353
TWS13-7-18W□	131(125)	71(65)	181(175)	ABS UL94V-0	407.5

■ ( ) value = enclosure dimension.

**TWS dimensions**

- Drawings below are reference examples only. DXF/DWG/PDF drawings available on our website.
- Refer to page 98 for detailed internal enclosure dimensions.

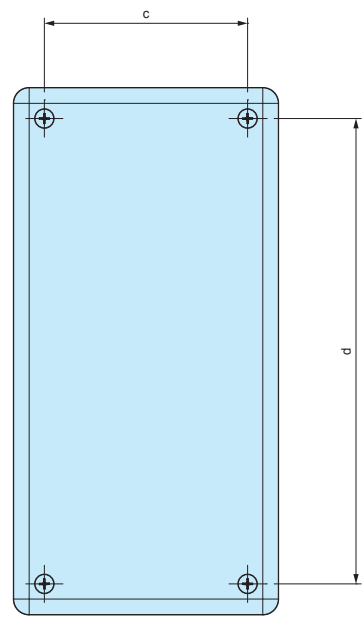
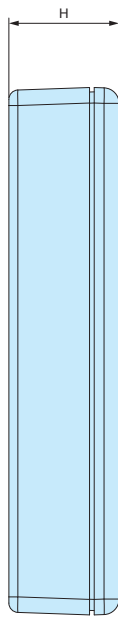
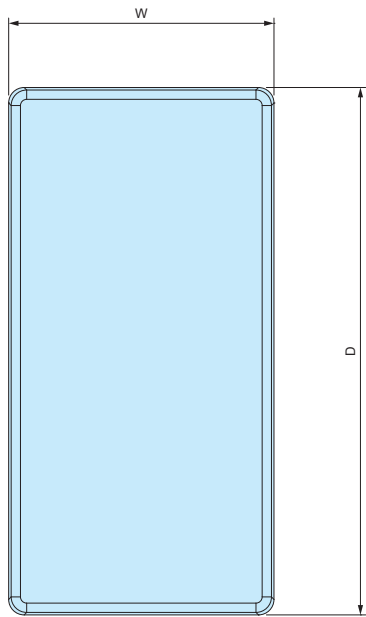
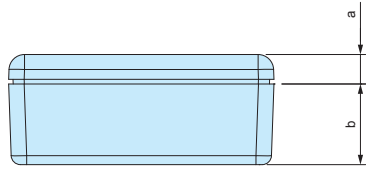


■ Please suffix color code at the end of the product number.

Product no.	W	H	D	a	b	c	d	e
TWS 7-3-13□□	71	32	136	52	13.5	11.8	54	98
TWS 7-5-13□□	71	56	136	52	37.5	11.9	54	98
TWS 9-4-17□□	91.5	41.5	176	67	22	13	71	130
TWS 9-6-17□□	91.5	66.5	176	67	46.5	13.3	71	130
TWS11-5-22□□	116	51.5	226	80	29	14.3	89	166
TWS11-8-22□□	116	81.5	226	80	58	14.5	89	166
TWS13-3-13□□	131	31	131	101	13	12	104	76
TWS13-5-13□□	131	51	131	101	29.5	13.5	104	76
TWS13-3-18□□	131	31	181	101	13	12	104	126
TWS13-5-18□□	131	51	181	101	29.5	13.5	104	126
TWS13-7-18□□	131	71	181	101	48.5	14	104	126

Enclosure dimensions

Refer to page 98 for detailed enclosure dimensions.

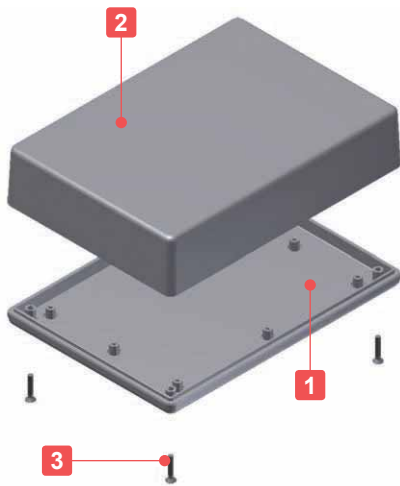


Please suffix color code at the end of the product number.

Product no.	W	H	D	a	b	c	d
TWS 7-3-13□□	65	25.6	130	8.1	17.5	47	112
TWS 7-5-13□□	65	50.1	130	8.1	42	47	112
TWS 9-4-17□□	85.5	35.5	170	9.5	26	65.5	150
TWS 9-6-17□□	85.5	60.5	170	9.5	51	65.5	150
TWS11-5-22□□	110	45.3	220	10.3	35	88	198
TWS11-8-22□□	110	75.3	220	10.3	65	88	198
TWS13-3-13□□	125	25	125	8.5	16.5	107	107
TWS13-5-13□□	125	45	125	8.5	36.5	107	107
TWS13-3-18□□	125	25	175	8.5	16.5	105	155
TWS13-5-18□□	125	45	175	8.5	36.5	105	155
TWS13-7-18□□	125	65	175	8.5	56.5	105	155

**Technical Data**

Protection class: IP40  
 Operating temperature: -10°C ~ +60°C



- Universal plastic enclosure with screw fastening.
- Selectable in 26 sizes in 3 colors ; Light gray, Black and Off-white.
- Suitable for measuring instruments, testing devices, wireless communication devices, medical devices, and so on.

**Components**

No.	Part name	Pcs	Material : Color / Finish
1	Cover	1	TW : ABS UL94HB / Light gray • Black
			TWN : ABS UL94V-0 / Off-white
2	Bottom base	1	TW : ABS UL94HB / Light gray • Black
			TWN : ABS UL94V-0 / Off-white
3	Self tapping screw	2/4	TW : Steel / Trivalent chromate • Black trivalent chromate
			TWN : Steel / Nickel plated

**APPLICATION EXAMPLE**

**Accessories (Optional parts)**



Silicone band SIB series  
See page SIB-1



Suspension bracket WM series  
See page WM-1



Neodymium magnet NMG series  
See page NMG-1



**SERIAL FLASH PROGRAMMER**

Product by Minato Holdings (Japan)



Snap-in battery box LD • LDN series  
See page LD • LDN-1 ~ LD • LDN-2



PCB mounting screw EM-2.3  
See page EM• MR-1



Tapping standoff TPS series  
See page TPS• MT-1

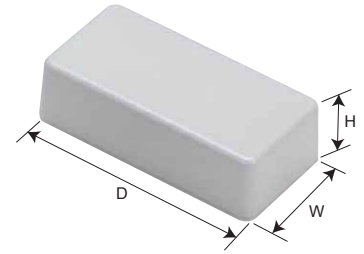


**SURGE PROTECTION DEVICE CHECKER**

Product by OTOWA Electric (Japan)

**Color Type**

Series	Code	Top cover	Bottom cover	Screw
TW	G	Light gray	Light gray	Trivalent chromate
	B	Black	Black	Black trivalent chromate
TWN	W	Off-white	Off-white	Nickel plated


**TW series (ABS UL94HB)**
**Product no. / Dimensions**

Product no.		Dimensions			Screw	Weight (g)
● Light gray	● Black	W	H	D		
TW 4-2- 5G	TW 4-2- 5B	35	20	50	M2.6-12 × 2 pcs	13.5
TW 4-2- 6G	TW 4-2- 6B	35	20	60	M2.6-12 × 2 pcs	15.5
TW 4-2- 8G	TW 4-2- 8B	40.3	20	80.3	M2.6-12 × 2 pcs	22
TW 5-2- 5G	TW 5-2- 5B	50	15	50	M2.6-12 × 4 pcs	18
TW 5-3- 5G	TW 5-3- 5B	50	25	50	M2.6-12 × 4 pcs	22
TW 5-2- 7G	TW 5-2- 7B	50	15	70	M2.6-12 × 4 pcs	22
TW 5-3- 7G	TW 5-3- 7B	50	27.5	70	M2.6-12 × 4 pcs	29
TW 5-4- 7G	TW 5-4- 7B	50	40	70	M2.6-12 × 4 pcs	35
TW 5-3- 9G	TW 5-3- 9B	45	25	90	M3-12 × 4 pcs	30.5
TW 5-3-10G	TW 5-3-10B	50	30	100	M3-12 × 4 pcs	45.5
TW 7-2-11G	TW 7-2-11B	70	20	105	M2.6-14 × 4 pcs	56.5
TW 7-4-11G	TW 7-4-11B	70	35	105	M2.6-14 × 4 pcs	70
TW 7-5-11G	TW 7-5-11B	70	50	105	M2.6-14 × 4 pcs	83
TW 7-3-13G	TW 7-3-13B	65	25.6	130	M3-16 × 4 pcs	76
TW 7-5-13G	TW 7-5-13B	65	50.1	130	M3-16 × 4 pcs	100
TW 8-2- 8G	TW 8-2- 8B	80	20	80	M2.6-12 × 4 pcs	49
TW 8-4- 8G	TW 8-4- 8B	80	40	80	M2.6-12 × 4 pcs	65
TW 9-4-17G	TW 9-4-17B	85.5	35.5	170	M3-16 × 4 pcs	133
TW 9-6-17G	TW 9-6-17B	85.5	60.5	170	M3-16 × 4 pcs	168
TW11-5-22G	TW11-5-22B	110	45.3	220	M3-16 × 4 pcs	223
TW11-8-22G	TW11-8-22B	110	75.3	220	M3-16 × 4 pcs	277
TW13-3-13G	TW13-3-13B	125	25	125	M3-16 × 4 pcs	135
TW13-5-13G	TW13-5-13B	125	45	125	M3-16 × 4 pcs	165.5
TW13-3-18G	TW13-3-18B	125	25	175	M3-16 × 4 pcs	184.5
TW13-5-18G	TW13-5-18B	125	45	175	M3-16 × 4 pcs	218
TW13-7-18G	TW13-7-18B	125	65	175	M3-16 × 4 pcs	254

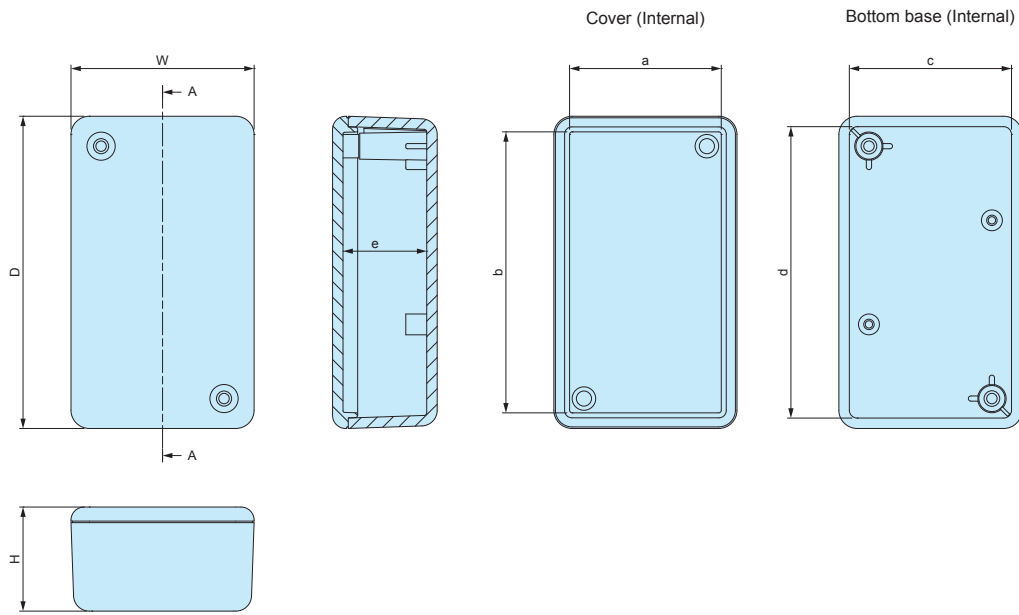
**TWN series (ABS UL94V-1 • UL94V-0)**
**Product no. / Dimensions**

Product no.	W	H	D	Screw	UL class	Weight (g)
TWN 4-2- 5W	35	20	50	M2.6-12 × 2 pcs	UL94V-0	16.5
TWN 4-2- 6W	35	20	60	M2.6-12 × 2 pcs	UL94V-0	18
TWN 4-2- 8W	40.3	20	80.3	M2.6-12 × 2 pcs	UL94V-0	26
TWN 5-2- 7W	50	15	70	M2.6-12 × 4 pcs	UL94V-0	24.5
TWN 5-3- 7W	50	27.5	70	M2.6-12 × 4 pcs	UL94V-0	33
TWN 5-4- 7W	50	40	70	M2.6-12 × 4 pcs	UL94V-0	39.5
TWN 5-3- 9W	45	25	90	M3-16 × 4 pcs	UL94V-0	35
TWN 7-2-11W	70	20	105	M2.6-14 × 4 pcs	UL94V-0	64.5
TWN 7-4-11W	70	35	105	M2.6-14 × 4 pcs	UL94V-0	80
TWN 7-5-11W	70	50	105	M2.6-14 × 4 pcs	UL94V-0	94.5
TWN 7-3-13W	65	25.6	130	M3-16 × 4 pcs	UL94V-0	85
TWN 7-5-13W	65	50.1	130	M3-16 × 4 pcs	UL94V-0	115.5
TWN 8-2- 8W	80	20	80	M2.6-12 × 4 pcs	UL94V-0	55.5
TWN 8-4- 8W	80	40	80	M2.6-12 × 4 pcs	UL94V-0	75
TWN 9-4-17W	85.5	35.5	170	M3-16 × 4 pcs	UL94V-0	151
TWN 9-6-17W	85.5	60.5	170	M3-16 × 4 pcs	UL94V-0	191
TWN11-5-22W	110	45.3	220	M3-16 × 4 pcs	UL94V-0	254
TWN11-8-22W	110	75.3	220	M3-16 × 4 pcs	UL94V-0	316
TWN13-3-13W	125	25	125	M3-16 × 4 pcs	UL94V-0	156.5
TWN13-5-13W	125	45	125	M3-16 × 4 pcs	UL94V-0	190
TWN13-3-18W	125	25	175	M3-16 × 4 pcs	UL94V-0	206.5
TWN13-5-18W	125	45	175	M3-16 × 4 pcs	UL94V-0	249
TWN13-7-18W	125	65	175	M3-16 × 4 pcs	UL94V-0	290.5

**TW / TWN • TWS dimensions**

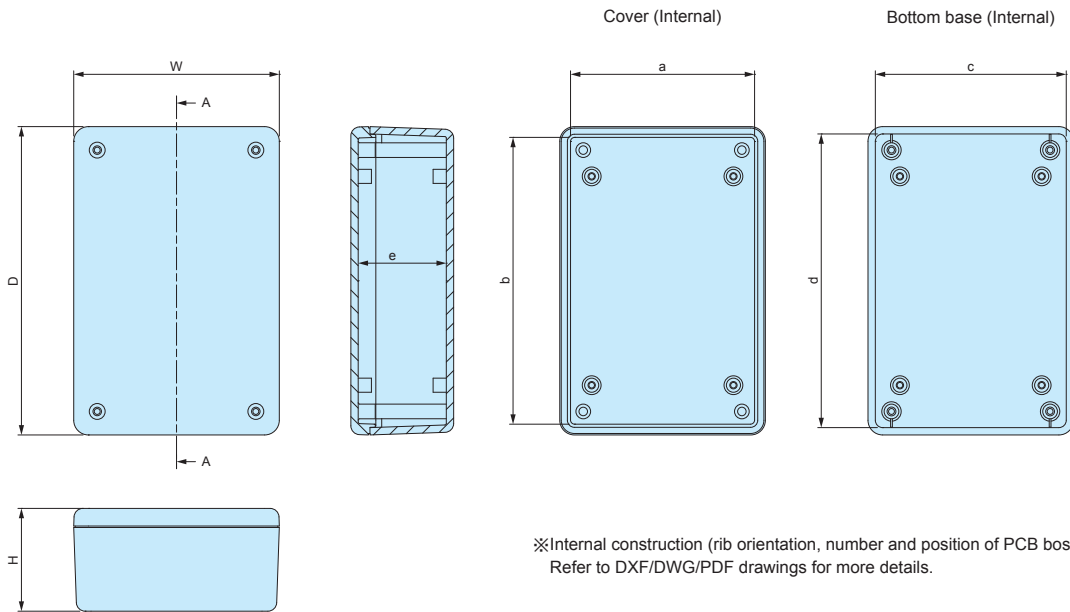
■ Drawings below are reference examples only.  
DXF/DWG/PDF drawings available on our website.

TW / TWN4-2-5 • TW / TWN4-2-6 • TW / TWN4-2-8



Product no.	W	H	D	a	b	c	d	e
TW • TWN4-2-5□	35	20	50	28.2	43.2	28.9	43.9	16
TW • TWN4-2-6□	35	20	60	28.2	53.2	28.9	53.9	16
TW • TWN4-2-8□	40.3	20	80.3	33.5	73.5	34.2	74.2	16

TW5-2-5 • TW5-3-5 • TW / TWN5-2-7 • TW / TWN5-3-7 • TW / TWN5-4-7  
TW / TWN7-2-11 • TW / TWN7-4-11 • TW / TWN7-5-11 • TW / TWN8-2-8 • TW / TWN8-4-8



※Internal construction (rib orientation, number and position of PCB bosses) vary by model.  
Refer to DXF/DWG/PDF drawings for more details.

Product no.	W	H	D	a	b	c	d	e
TW 5-2- 5□	50	15	50	42.8	42.8	44.3	44.3	11
TW 5-3- 5□	50	25	50	42.8	42.8	43.6	43.6	21
TW • TWN5-2- 7□	50	15	70	43.2	63.2	44.3	64.3	11
TW • TWN5-3- 7□	50	27.5	70	43.2	63.2	43.4	63.4	23.5
TW • TWN5-4- 7□	50	40	70	43.2	63.2	42.5	62.5	36
TW • TWN7-2-11□	70	20	105	61.2	96.2	63.2	98.2	15
TW • TWN7-4-11□	70	35	105	61.2	96.2	62.2	97.2	30
TW • TWN7-5-11□	70	50	105	61.2	96.2	61.1	96.1	45
TW • TWN8-2- 8□	80	20	80	71.6	71.6	73	73	15
TW • TWN8-4- 8□	80	40	80	71.6	71.6	71.6	71.6	35

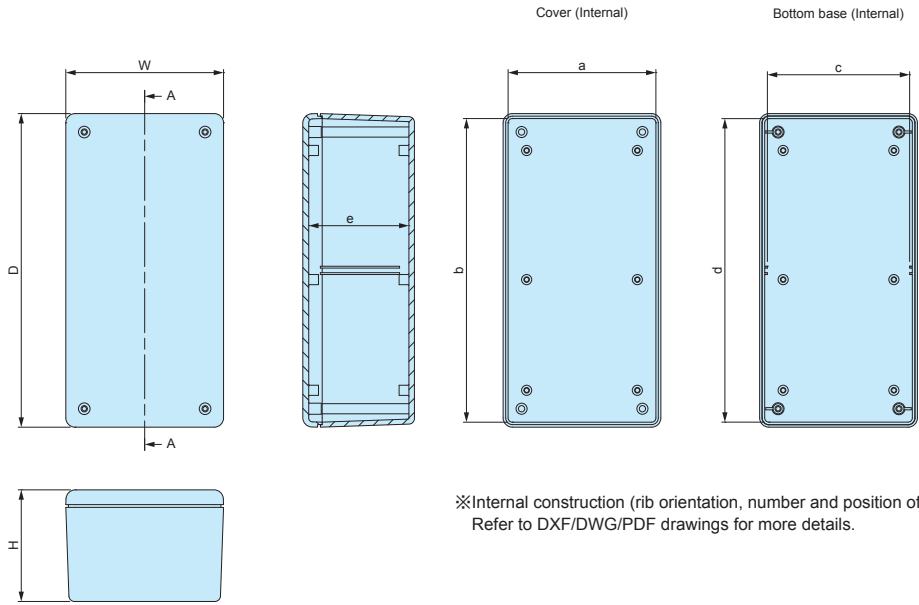


TW / TWN5-3-9 • TW5-3-10

TW / TWN7-3-13 / TWS7-3-13 (Internal enclosure) • TW / TWN7-5-13 / TWS7-5-13 (Internal enclosure)

TW / TWN9-4-17 / TWS9-4-17 (Internal enclosure) • TW / TWN9-6-17 / TWS9-6-17 (Internal enclosure)

TW / TWN11-5-22 / TWS11-5-22 (Internal enclosure) • TW / TWN11-8-22 / TWS11-8-22 (Internal enclosure)



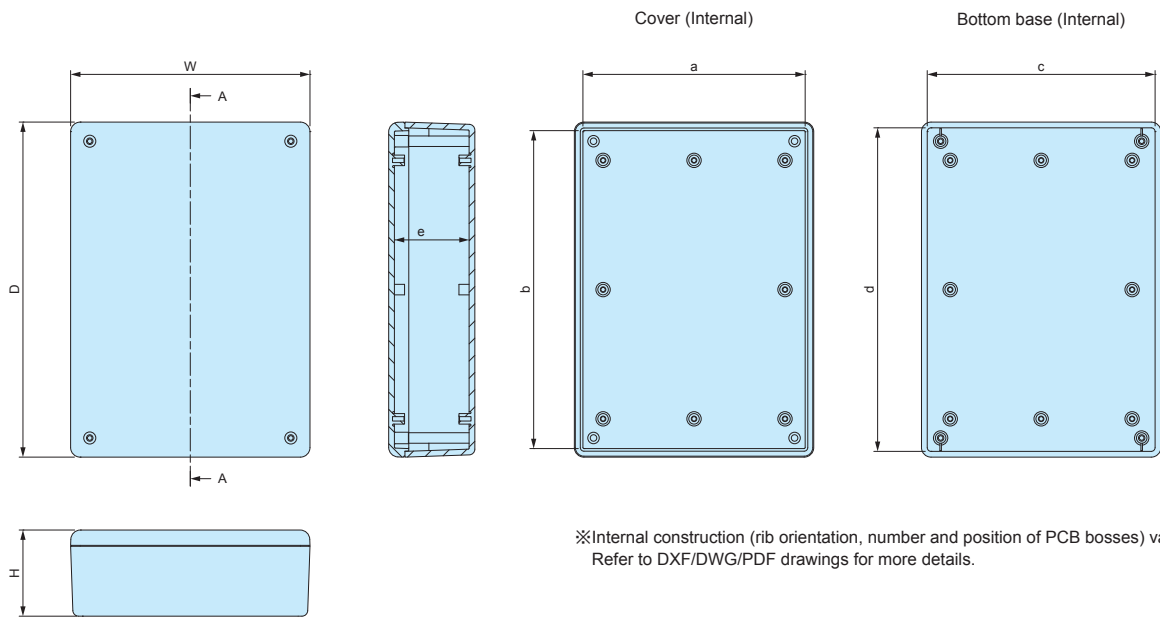
※Internal construction (rib orientation, number and position of PCB bosses) vary by model  
Refer to DXF/DWG/PDF drawings for more details.

Product no.	W	H	D	a	b	c	d	e
TW • TWN 5-3- 9□	45	25	90	37.8	82.8	37.7	82.7	21
TW 5-3-10□	50	30	100	42.6	92.6	42.3	92.3	26
TW • TWN 7-3-13□	65	25.6	130	55.3	120.3	57.7	122.7	19.6
TW • TWN 7-5-13□	65	50.1	130	55.3	120.3	55.9	120.9	44.1
TW • TWN 9-4-17□	85.5	35.5	170	75.7	160.2	77.1	162	29.3
TW • TWN 9-6-17□	85.5	60.5	170	75.7	160.2	75.7	160.2	54.3
TW • TWN11-5-22□	110	45.3	220	100.1	210.1	101.4	211.4	39.1
TW • TWN11-8-22□	110	75.3	220	100.1	210.1	99.3	209.3	69.1

TW / TWN13-3-13 / TWS13-3-13 (Internal enclosure) • TW / TWN13-5-13 / TWS13-5-13 (Internal enclosure)

TW / TWN13-3-18 / TWS13-3-18 (Internal enclosure) • TW / TWN13-5-18 / TWS13-5-18 (Internal enclosure)

TW / TWN13-7-18 / TWS13-7-18 (Internal enclosure)



※Internal construction (rib orientation, number and position of PCB bosses) vary by model  
Refer to DXF/DWG/PDF drawings for more details.

Product no.	W	H	D	a	b	c	d	e
TW • TWN13-3-13□	125	25	125	114.5	114.5	117.2	117.2	19
TW • TWN13-5-13□	125	45	125	114.5	114.5	115.8	115.8	39
TW • TWN13-3-18□	125	25	175	114.5	164.5	117	167	19
TW • TWN13-5-18□	125	45	175	114.5	164.5	115.6	165.6	39
TW • TWN13-7-18□	125	65	175	114.5	164.5	114.2	164.2	59

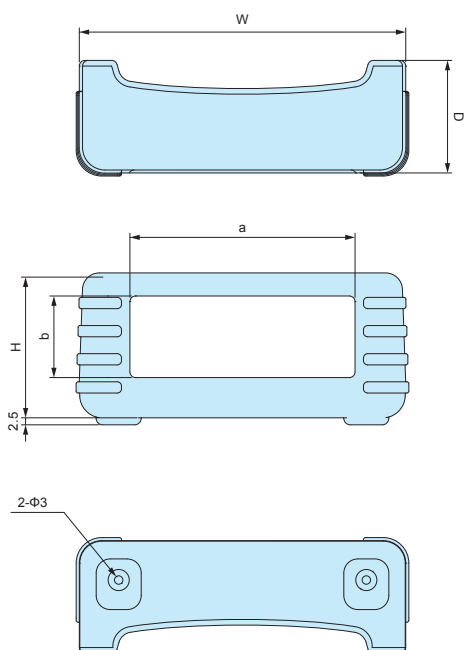
**TWSC SERIES SILICONE PROTECTOR for TW•TWN**

Color Type



- Silicone Protector for TW • TWN series. Selectable in 6 colors.
- Please select a model based on the suitable plastic case as listed below. The silicone protector is a set of 2 pcs.
- Custom color is available from 500 pairs per order. Please specify the **PANTONE®** color number or provide your sample color.

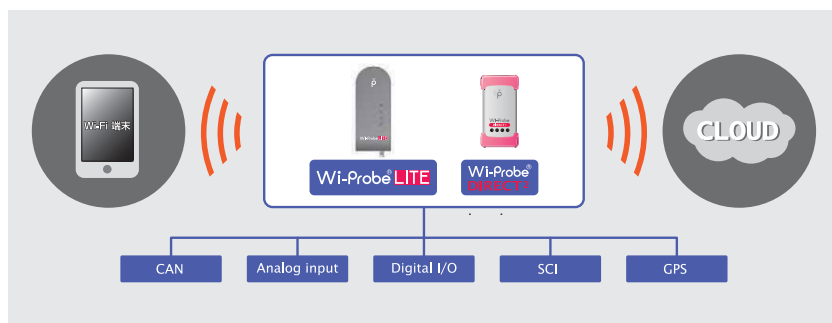
■ DXF/DWG/PDF drawings available on our website.



**APPLICATION EXAMPLE**

**Wi-Fi DIRECT DATA LOGGER**

Product by Tkcc (Japan)



**Components**

Part name	Pcs	Material	Color / Finish
Silicone protector	1 set (2 pcs)	Silicone	Pink • Yellow • Green • Navy • Light gray • Black
Self tapping screw	4	Steel M3-20	Black trivalent chromate

**Product no. / Dimensions**

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

Product no.	W	H	D	a	b	c	d	e	f	g	h	Suitable case	Weight (g)
TWSC 7-3□	71	32	27	52	13.5	3.2	3.3	12	47	12	15	TW / TWN 7-3-13	41
TWSC 7-5□	71	56	27	52	37.5	3.15	3.1	12	47	12	15	TW / TWN 7-5-13	47.5
TWSC 9-4□	91.5	41.5	33	67	22	3.1	3.15	13	65.5	13	20	TW / TWN 9-4-17	60
TWSC 9-6□	91.5	66.5	33	67	46.5	3.2	3.3	13	65.5	13	20	TW / TWN 9-6-17	75
TWSC11-5□	116	51.5	40	80	29	3.25	3.3	14	88	14	26	TW / TWN11-5-22	102.5
TWSC11-8□	116	81.5	40	80	58	3.2	3.3	14	88	14	26	TW / TWN11-8-22	122
TWSC13-3□	131	31	38	101	13	3.15	3.2	13	105	13	25	TW / TWN13-3-13 TW / TWN13-3-18	87
TWSC13-5□	131	51	38	101	29.5	3.3	3.3	13	105	13	25	TW / TWN13-5-13 TW / TWN13-5-18	104
TWSC13-7□	131	71	38	101	48.5	3.3	3.3	13	105	13	25	TW / TWN13-7-18	117

SIB SERIES

SILICONE BAND



Application example

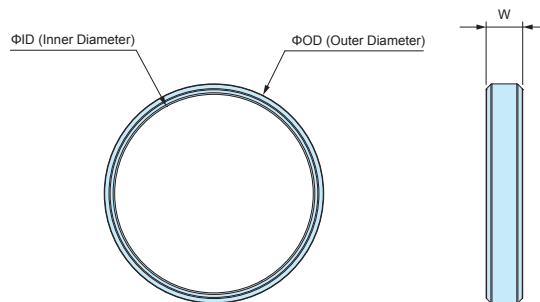


- Silicone band designed to fit TW & TWN series. Refer to the table below for size suitability.
- Silicone band provides both shock resistance and non-slip grips for the TW & TWN enclosure.

Color Type

Code	R Red	O Orange	Y Yellow	G Green	C Cyan	N Navy	L Light gray	B Black
Color								

SIB dimensions



Components

Part name	Pcs	Material	Color
Silicone band	Pair (2 pcs)	Silicone	Red • Orange • Yellow • Green • Cyan • Navy • Light gray • Black

Product no. / Dimensions

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

Product no.	W	ID	OD	Suitable enclosures	Weight (g)
<b>NEW</b> SIB-21□	6	21	25	TW/TWN4-2-5 • 4-2-6 • 4-2-8 • 5-2-5 • 5-2-7 • 5-3-9	2
<b>NEW</b> SIB-38□	7	38	42	TW/TWN5-3-5 • 5-3-7 • 5-4-7 • 5-3-10 • 7-2-11 • 7-4-11 7-3-13 • 8-2-8	4
<b>NEW</b> SIB-58□	8	58	63	TW/TWN7-5-11 • 7-5-13 • 8-4-8 • 9-4-17	10
<b>NEW</b> SIB-72□	10	72	77	TW/TWN 9 -6-17 • 11-5-22 • 11-8-22 • 13-3-13 • 13-5-13 13-3-18 • 13-5-18 • 13-7-18	14

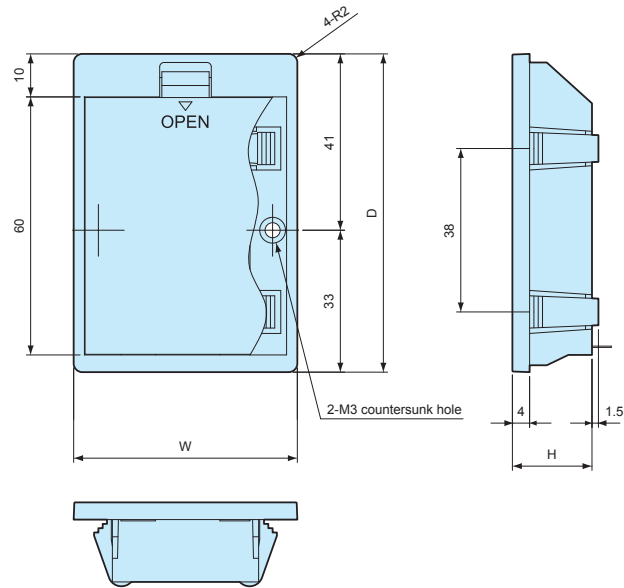
**LD • LDN SERIES**

**SNAP-IN BATTERY BOX**

Snap-in battery holders are available for installation onto TWS • TW • TWN series.  
Hole milling is required for installation of battery holder.



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



**Color Type**

Code	Color	Material
G	Light gray	ABS UL94HB
B	Black	ABS UL94HB
W	White	PC+ABS UL94V-0

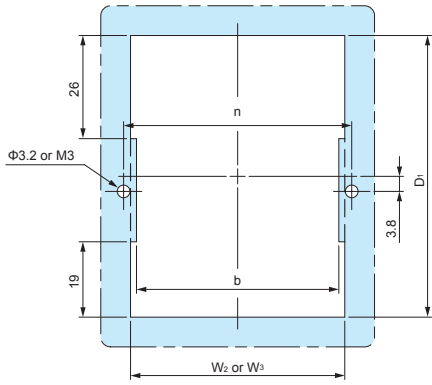
※ See website for more details

**Product no. / Dimensions**

Product no.			Battery compartment	Dimensions		TWS • TW • TWN suitable models
● Light gray	● Black	● White		W	H	
LD-006PG LDN-006PG	LD-006PB LDN-006PB	LD-006PW LDN-006PW	9V x 1	52	21.5	7-5-11, 7-5-13, 8-4-8, 9-4-17, 9-6-17, 11-5-22, 11-8-22, 13-3-13, 13-5-13, 13-3-18, 13-5-18, 13-7-18
LD-2G LDN-2G	LD-2B LDN-2B	LD-2W LDN-2W	AA x 2	52	18.5	7-4-11, 7-5-11, 7-3-13, 7-5-13, 8-2-8, 8-4-8, 9-4-17, 9-6-17, 11-5-22, 11-8-22, 13-3-13, 13-5-13, 13-3-18, 13-5-18, 13-7-18
LD-3G LDN-3G	LD-3B LDN-3B	LD-3W LDN-3W	AA x 3	64.5	18.5	7-4-11, 7-5-11, 9-4-17, 9-6-17, 11-5-22, 11-8-22, 13-3-13, 13-5-13, 13-3-18, 13-5-18, 13-7-18
LD-4G LDN-4G	LD-4B LDN-4B	LD-4W LDN-4W	AA x 4	82	18.5	9-4-17, 9-6-17, 11-5-22, 11-8-22, 13-3-13, 13-5-13, 13-3-18, 13-5-18, 13-7-18

LD : without Lead-wire version LDN : with Lead-wire (140mm) version

LD • LDN mounting hole



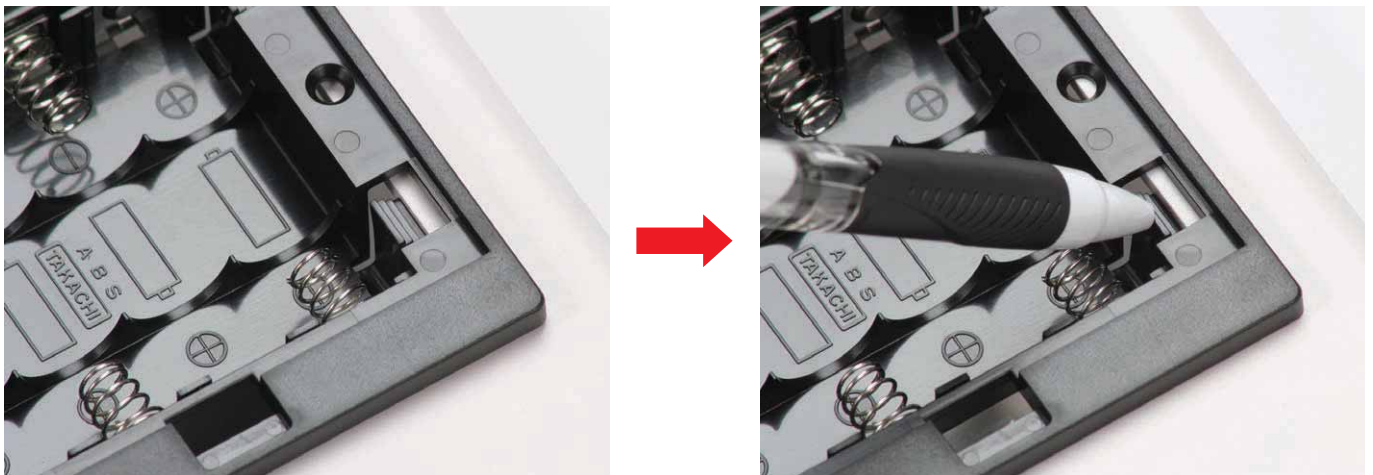
Mounting hole dimension

Product no.	W <sub>2</sub> (thickness=2.5mm)	W <sub>3</sub> (thickness=3.0mm)	D1	b	n
LD / LDN-2 • 006P	38.5	40.5	70.6	34.5	40.5
LD / LDN-3	52.5	54	70.4	49	53
LD / LDN-4	68.5	70.5	70.6	64.5	70.1

■ W<sub>2</sub> or W<sub>3</sub> size depends on the thickness of the enclosure wall used for mounting.

How to mount the battery box on the enclosure

Please push the hook using a thin stick when mounting the battery box on the enclosure.  
Please use minimal force when pushing to avoid breaking it.



Customization available

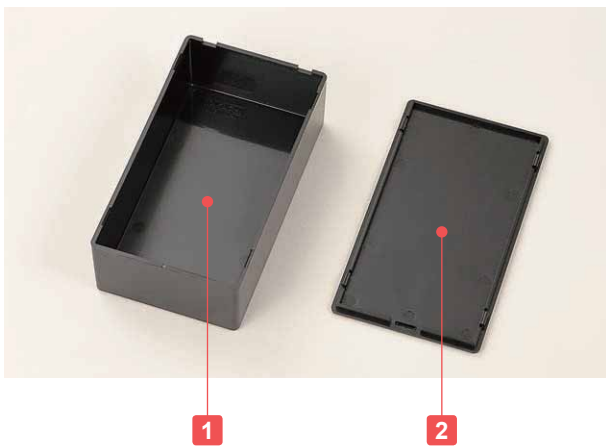


Contact us with your drawings.

E-mail : [sales@takachi-el.co.jp](mailto:sales@takachi-el.co.jp)



Technical Data
Protection class: IP40
Operating temperature:
SW-SW-N: -10°C ~ +60°C
SW-T: -10°C ~ +100°C



- No screws required; simple snap on / off cover.
- General purpose compact type case.
- Ample interior space.
- Exclusive PCB is available.
- 3 different material types (standard, flame-resistant, and heat-resistant) are available.

Components

No.	Part name	Material / Color
1	Base	SW : ABS UL94HB / Light gray • Black
		SW-N : ABS UL94V-1 : UL94V-0 / Gray
		SW-T : ABS heat-resistant / Black
2	Cover	SW : ABS UL94HB / Light gray • Black
		SW-N : ABS UL94V-1 : UL94V-0 / Gray
		SW-T : ABS heat-resistant / Black

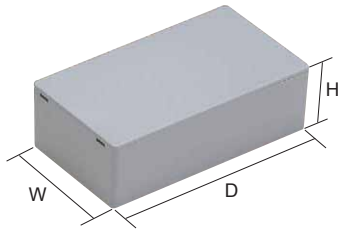
Accessories (Optional parts)



Adhesive standoff T-600, 700, ASR  
See page Standoff-1

Neodymium magnet NMG series  
See page NMG-1

**SW-SW-N-SW-T dimensions**



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

**Color Type**

Series	Code	Color
SW	S	Light gray
	B	Black
SW-N	G	Gray
SW-T	B	Black

**SW standard (ABS UL94HB)**

**Product no. / Dimensions**

Product no.		Dimensions			Weight (g)
● Light gray	● Black	W	H	D	
SW- 15S	SW- 15B	10	10	15	1
SW- 20S	SW- 20B	15	15	20	2
SW- 30S	SW- 30B	20	18	30	4
SW- 40S	SW- 40B	30	20	40	10
SW- 50S	SW- 50B	35	25	50	14
SW- 53S	SW- 53B	36	11	53	10
SW- 55S	SW- 55B	40	20	55	17
SW- 60S	SW- 60B	18	17	60	9
SW- 65S	SW- 65B	45	25	65	21
SW- 75S	SW- 75B	50	30	75	32
SW- 85S	SW- 85B	60	40	85	43
SW- 90S	SW- 90B	25	21	90	17
SW- 95S	SW- 95B	58	18	95	34
SW-100S	SW-100B	65	35	100	55
SW-120S	SW-120B	60	24	120	50
SW-125S	SW-125B	70	40	125	77
SW-130S	SW-130B	40	25	130	43

**SW-N flame-resistant (ABS UL94V-1 : UL94V-0)**

**Product no. / Dimensions**

Product no.	W	H	D	UL class	Weight (g)
SW-N 20G	15	15	20	UL94V-1	3
SW-N 30G	20	18	30	UL94V-1	5
SW-N 40G	30	20	40	UL94V-0	11
SW-N 50G	35	25	50	UL94V-0	17
SW-N 55G	40	20	55	UL94V-0	19
SW-N 65G	45	25	65	UL94V-0	23
SW-N 75G	50	30	75	UL94V-0	35
SW-N 85G	60	40	85	UL94V-0	50
SW-N 95G	58	18	95	UL94V-0	37
SW-N100G	65	35	100	UL94V-0	60
SW-N120G	60	24	120	UL94V-0	56
SW-N125G	70	40	125	UL94V-0	85
SW-N130G	40	25	130	UL94V-0	48

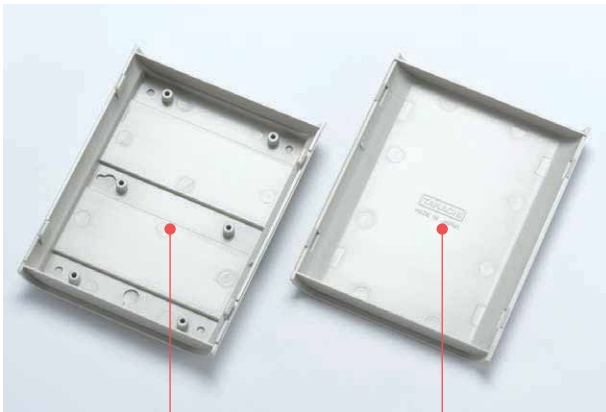
**SW-T heat-resistant (ABS heat distortion temperature 100°C)**

**Product no. / Dimensions**

Product no.	W	H	D	Weight (g)
SW-T 20B	15	15	20	2
SW-T 40B	30	20	40	9
SW-T 55B	40	20	55	16
SW-T 75B	50	30	75	30
SW-T 95B	58	18	95	31
SW-T100B	65	35	100	50



Technical Data
Protection class: IP40
Operating temperature: -10°C ~ +60°C



- Rounded shape design.
- Suitable for wall-mount communication device usage.
- Snap on / off cover. No screws are required.

Components

No.	Part name	Material	Color / Finish
1	Cover	ABS UL94HB	Light gray • White
2	Base	ABS UL94HB	Light gray • White

Accessories (Optional parts)



Tapping standoff TPS series  
See page TPS • MT-1



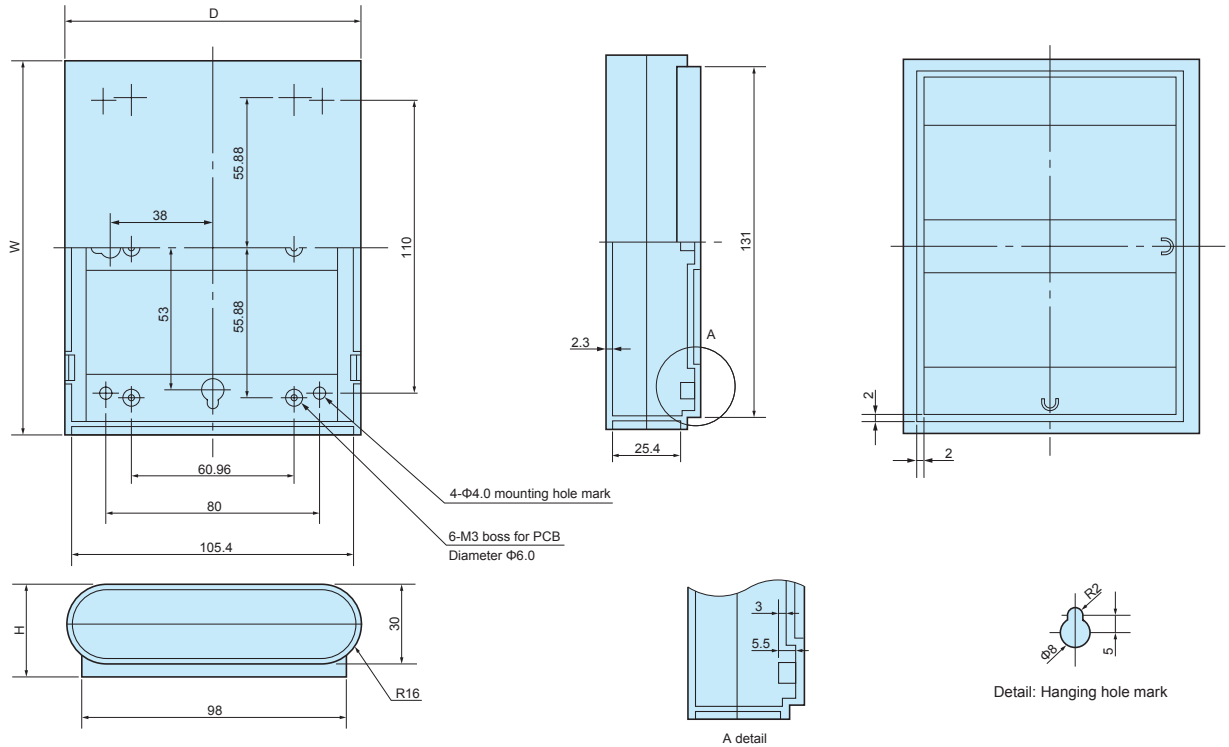
PCB mounting screw EM series  
See page EM • MR-1



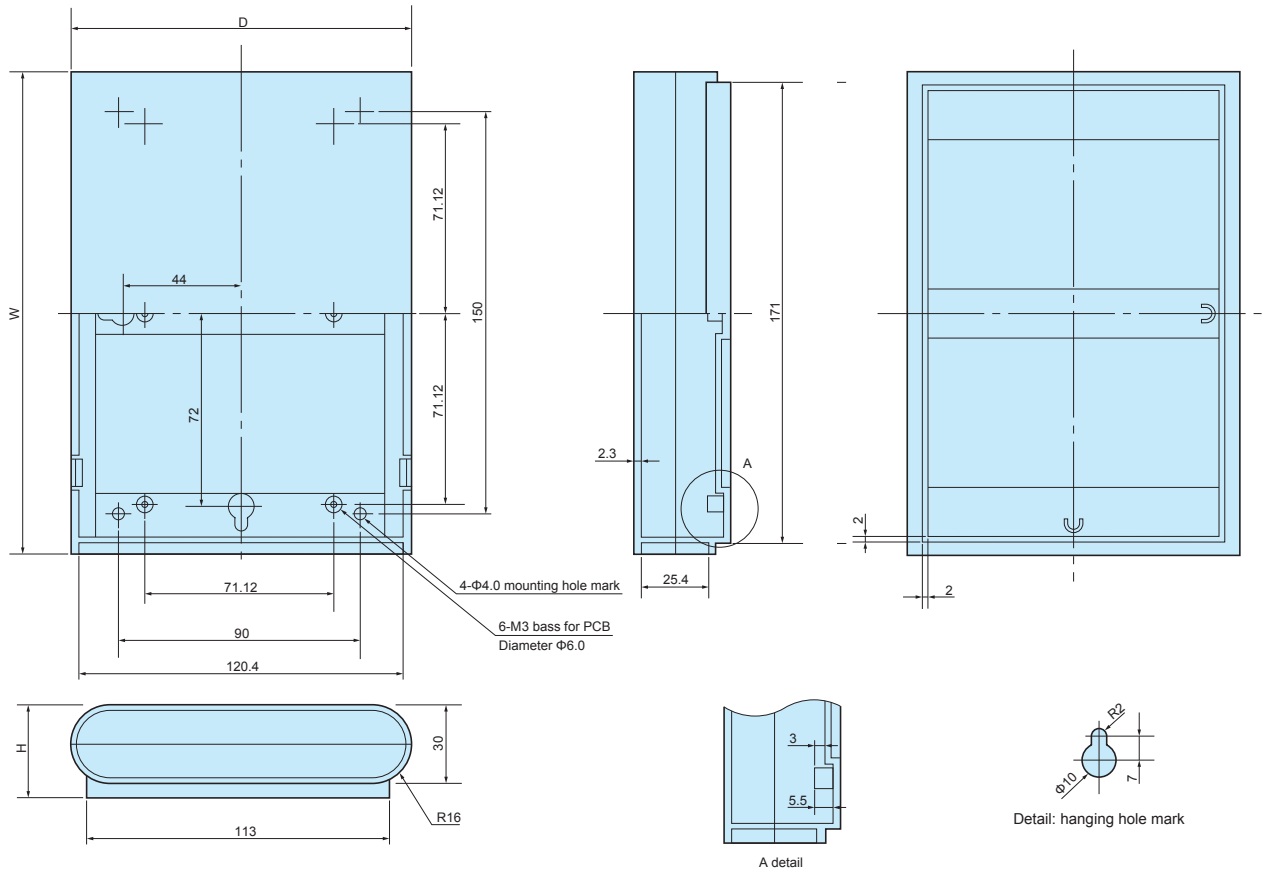
SU dimensions

DXF/DWG/PDF drawings available on our website.

SU-140



SU-180



Product no. / Dimensions

Product no.		Dimensions			Weight (g)
● Light gray	● White	W	H	D	
SU-140G	SU-140W	140	35	110	100
SU-180G	SU-180W	180	35	125	140

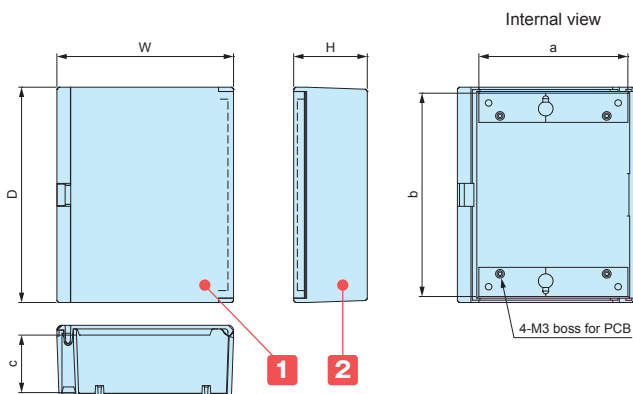


OP dimensions

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

Technical Data

Operating temperature: -10°C ~ +60°C



- Plastic case with hinged door.
- General purpose case for desk-top, wall-mount, and so on.

Components

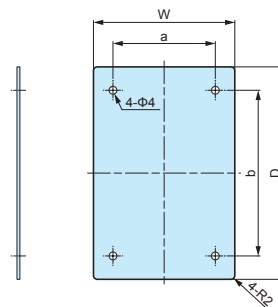
No.	Part name	Material	Color / Finish
1	Top cover	ABS UL94HB	Light gray • Black
2	Base	ABS UL94HB	Light gray • Black

Product no. / Dimensions

Product no.		Dimensions						Weight (g)
● Light gray	● Black	W	H	D	a	b	c	
OP-125G	OP-125B	100	45	125	81.2	116.6	35.7	130
OP-150G	OP-150B	120	50	150	101.2	141.6	40.7	185
OP-180G	OP-180B	145	55	180	128.8	174	43	275

Accessories (Optional parts)

OPP mounting plate



Product no. / Dimensions

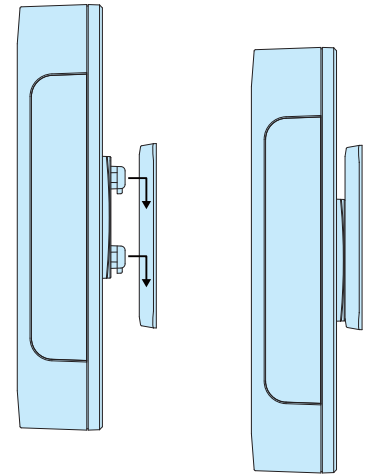
Product no.	W	D	a	b	Material	Color / Finish	Suitable box
OPP-125	72.5	109	52.5	85	Aluminium A1050P t = 1.5	Unfinished	OP-125
OPP-150	92.5	134	72.5	110	Aluminium A1050P t = 1.5	Unfinished	OP-150
OPP-180	115.5	164	98	140	Aluminium A1050P t = 1.5	Unfinished	OP-180

■ Included screw : M3-6 Steel pan head tapping • Trivalent chromate x 4 pcs

WM SERIES

SUSPENSION BRACKET

How to install

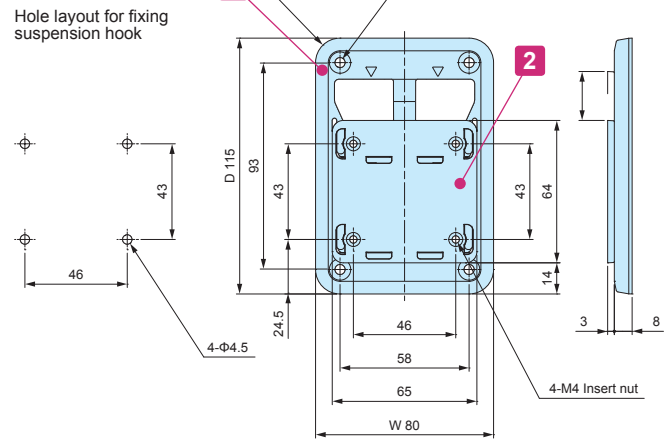
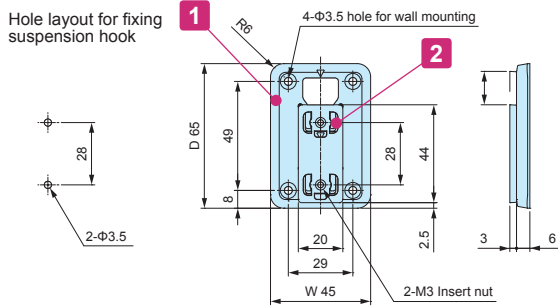


- Plastic wall mounting bracket. Easy attachment and removal.
  - Large and small brackets are available.
  - Applicable not only for the PF series, but also other plastic/metal enclosures with a panel thickness of 0.8 ~ 3.5mm.
  - To attach the suspension hook onto the enclosure, hole milling is required.
- 
- The max load values listed are static load values only. Use caution when handling.
  - Please be aware of the insertion direction of the suspension hook against the mounting base when attaching.

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

WM-1

WM-2



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

Components

No.	Part 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
-	Insert nut	2 / 4	Brass	Unfinished
-	Screw	2	M3-8 Steel binding = WM-1	Nickel plated
-	Screw	4	M4-8 Steel binding = WM-2	Nickel plated

Product no. / Dimensions

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

NMG SERIES

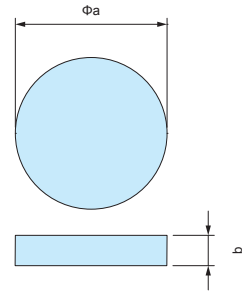
NEODYMIUM MAGNET



Round magnet



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



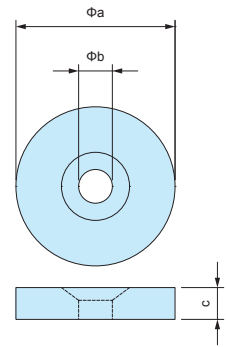
Components

Product no.	a	b	Weight (g)	Flus Density	Adsorption
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.



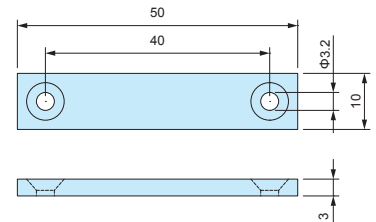
Components

Product no.	a	b	c	Countersunk size	Weight (g)	Flus Density	Adsorption
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.



Components

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

Example 1 The magnetic force remains strong even through plastic.

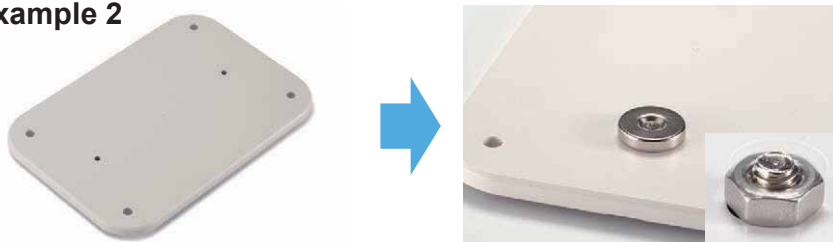


Make recessed pocket on the inside wall.

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.**



APPLICATION EXAMPLE

Technical Data
Max load : 7kg

- New tilt leg with eye catching colors and rounded design.
- Non-slip design with Elastomer (TPE) pad.
- Available in 3 different color patterns.

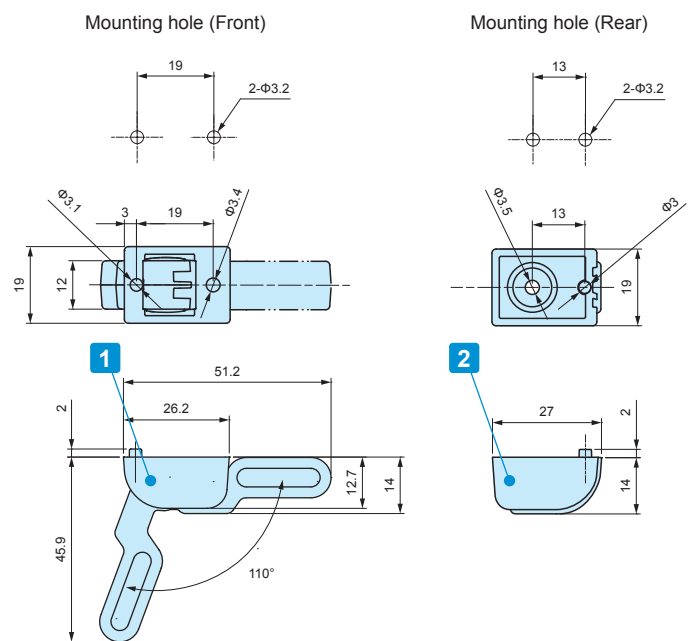
Components

No.	Part name	Pcs	Material	Color / Finish
1	Front foot	2	PC+ABS UL94V-0, TPE	Black & Black • Navy & Gray • Light gray & Gray
2	Rear foot	2	PC+ABS UL94V-0, TPE	Black & Black • Navy & Gray • Light gray & Gray
-	Washer head screw	4	Steel M3-6	Black trivalent chromate
-	Nut	4	Steel M3	Black trivalent chromate

Product no.

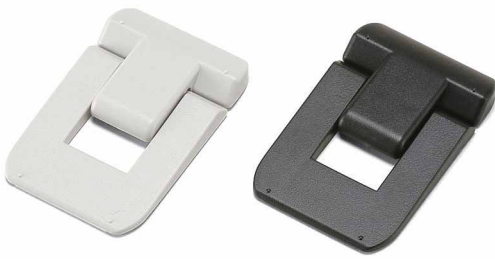
	Product no.	Color (plastic)	Color (TPE)
NEW	TLW-46BB	Black	Black
NEW	TLW-46NG	Navy	Gray
NEW	TLW-46LG	Light gray	Gray

- TLW tilt leg can be used in various applications.

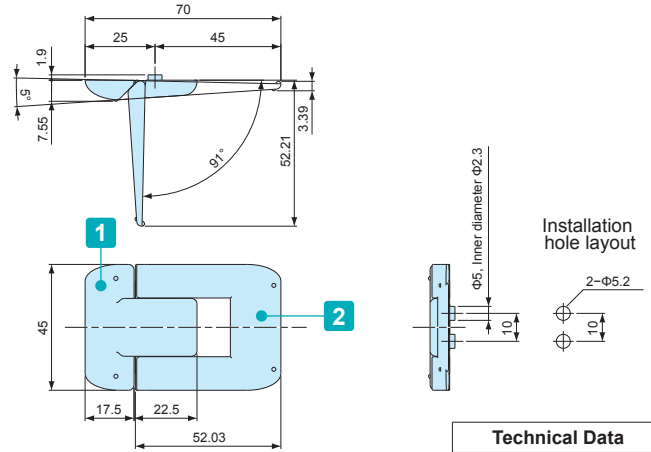


**TI SERIES**

**TILT STAND**



Installation Example



Technical Data
Max load : 3kg

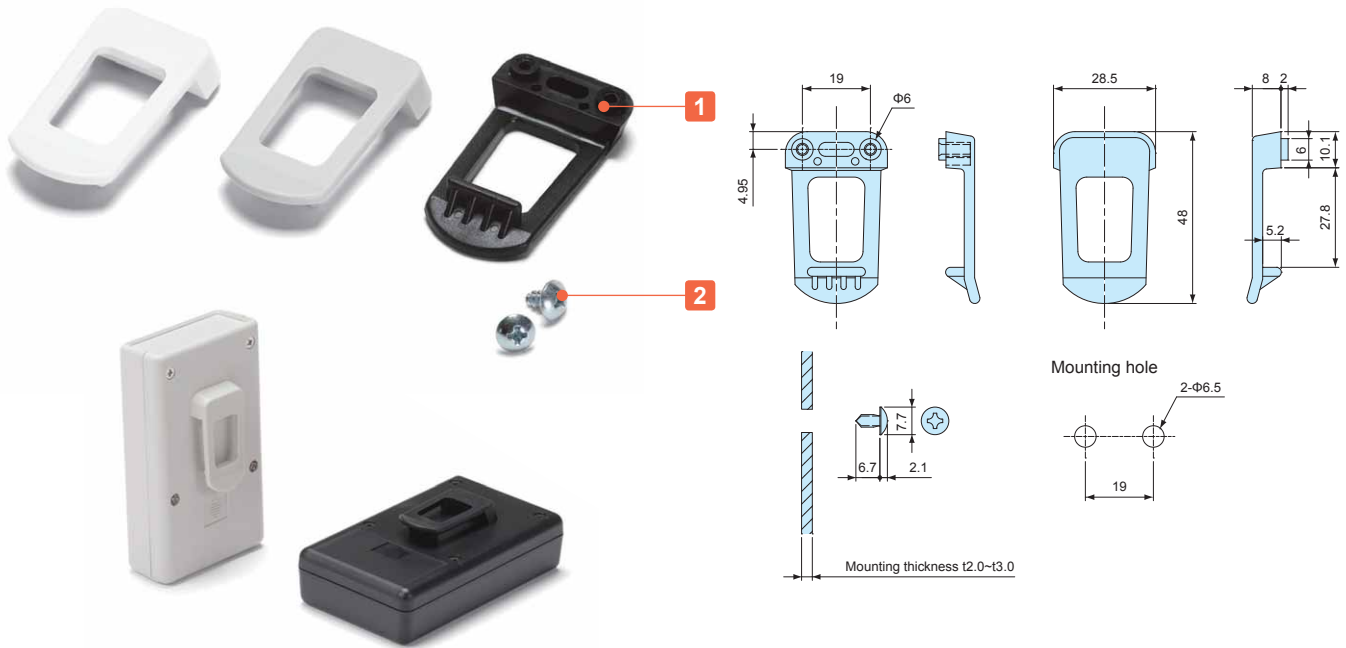
**Components**

No.	Part name	Pcs	Material	Color / Finish
1	Body	1	ABS UL94HB	Black • Light gray
2	Leg	1	ABS UL94HB	Black • Light gray
—	Screw (M3-6 Pan head tapping)	2	Steel	Trivalent chromate

**Product no.**

Product no.	
● Black	● Light Gray
TI-70B	TI-70S

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



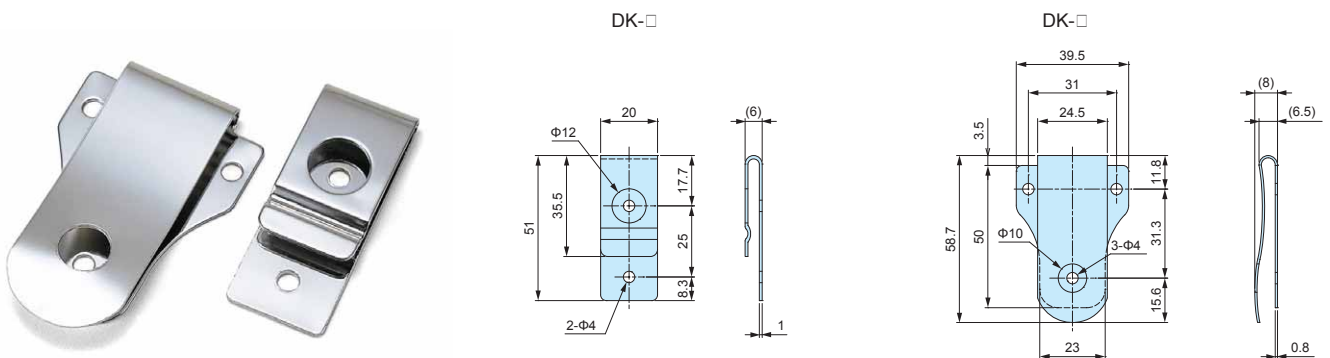
■ New White color type is added to match LC, PF, and TWN series color.

**Components**

No.	Holder material	Pcs	Material	Color / Finish
1	Clip	1	ABS UL94HB	White • White gray • Black
2	Screw	2	Steel M3.5-6	Zinc plated

**Product no. / Dimensions**

Product no.			W	H	D
● White	● White gray	● Black			
<b>NEW</b> GDH-1W	GDH-1G	GDH-1B	28.5	10	48

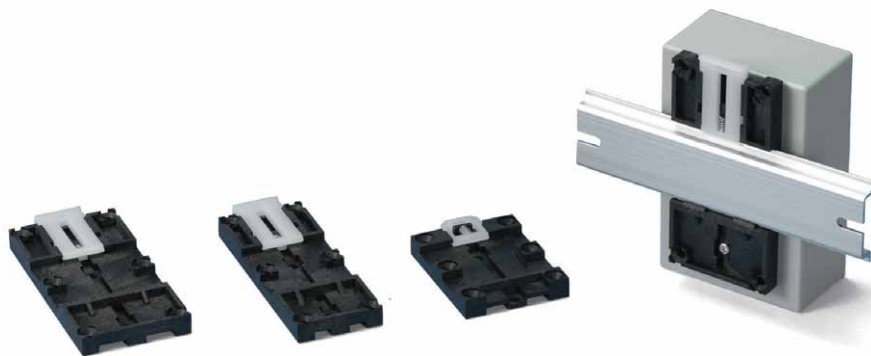


**Product no. / Dimensions**

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

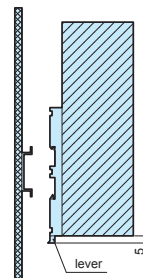
**DRA SERIES**

**DIN-RAIL MOUNTING BASE**



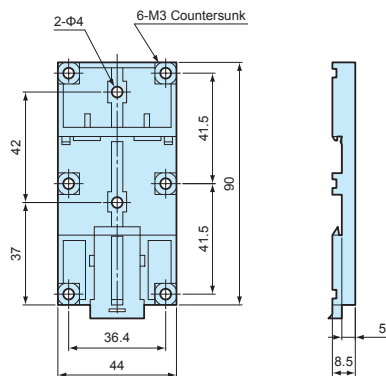
**NOTE**

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

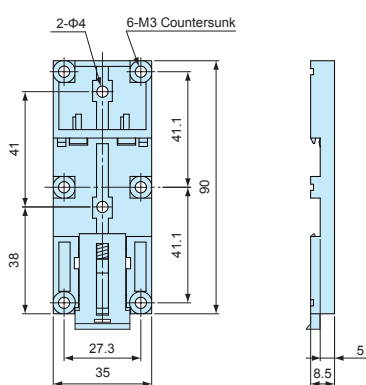


- For installation of enclosures, PCB and other parts onto a DIN rail.
- Simple installation and removal via the pull lever.

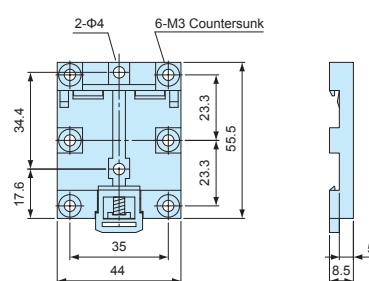
DRA-1



DRA-2



DRA-3

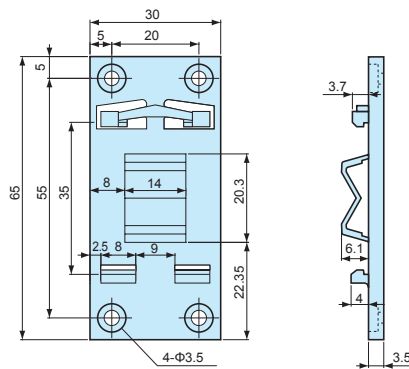


**Product no. / Dimensions**

Product no.	Material (body)	Material (lever)	Color	Weight (g)	Max load (kg)
DRA-1	PPE : SB UL94V-1	Nylon 66 UL94V-2	Black : Milky white	16.4	5
DRA-2	PPE : SB UL94V-1	Nylon 66 UL94V-2	Black : Milky white	14.5	5
DRA-3	PPE : SB UL94V-1	Nylon 66 UL94V-2	Black : Milky white	10.4	5

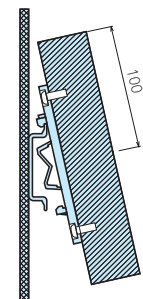
**DRT SERIES**

**DIN-RAIL MOUNTING BASE**



**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.

**Product no. / Dimensions**

Product no.	Material	Color	Weight (g)	Max load (kg)
DRT-1	PBT UL94V-0	Light gray	7.3	1

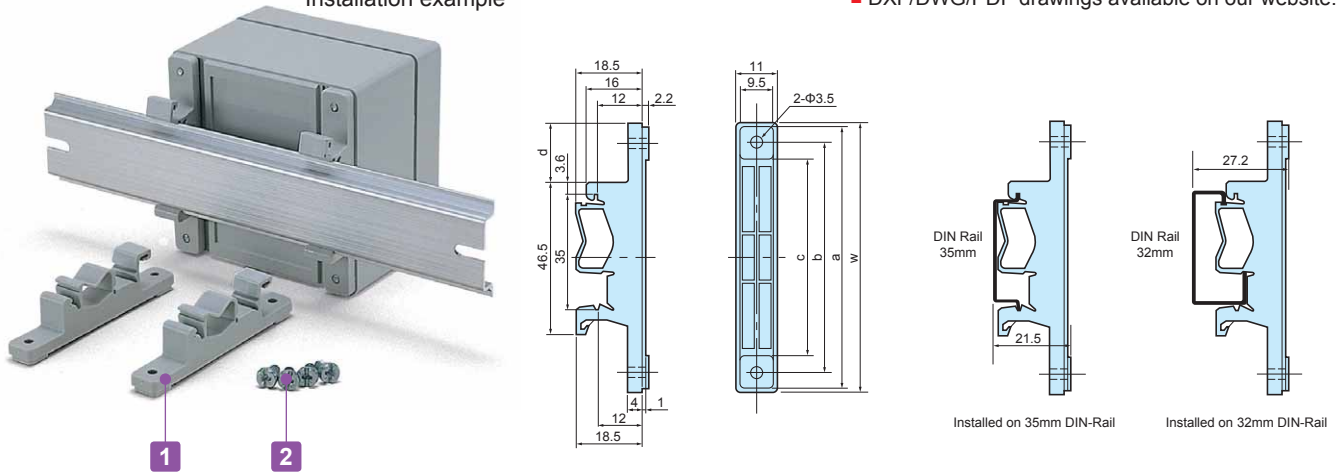


**CKD SERIES**

**DIN-RAIL MOUNTING FEET**

Installation example

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



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

Technical Data
Max load : 3kg

**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	Screw	Unichrome plated

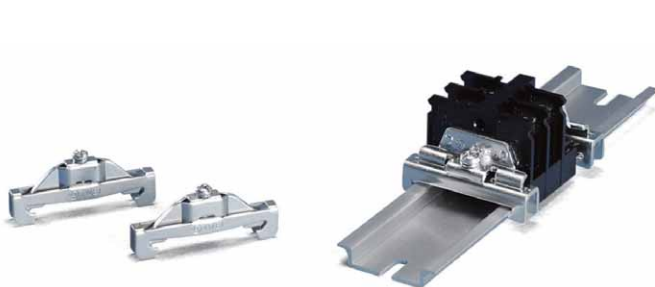
**Product no. / Dimensions**

Product no.	W	a	b	c	d	Pack of
CKD- 80	77	75	66	56	17	2
CKD-120	117	115	106	96	37	2
CKD-160	157	155	147	136	57	2

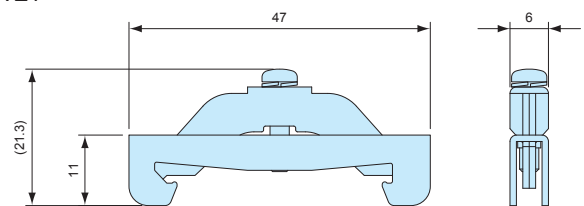
**TKR SERIES**

**DIN-RAIL TERMINAL BLOCKS END STOPPER**

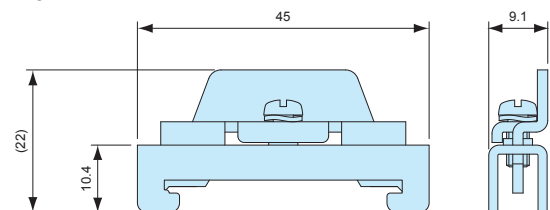
■ DXF/DWG/PDF drawings available on our website.



TKR-TWE1



TKR-JTXE3



- 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, TKR-JTXE3 is recommended for providing additional support.

**Product no. / Feature**

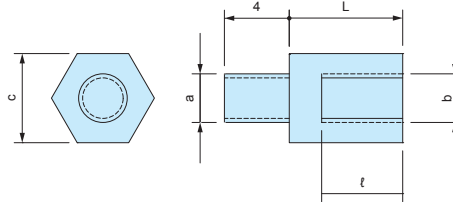
Product no.	Material	Color / Finish	Pack of
TKR-TWE1	Steel sheet	Trivalent chromate	2
TKR-JTXE3	Steel sheet	Trivalent chromate	2

TPS SERIES

TAPPING STANDOFF



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



Product no. / Dimensions

■ Material / Finish : Brass / Unfinished

Product no.	Screw size (a)	Screw size (b)	c	L	ℓ	Pack of	Recommended enclosure models	
TPS-M2.3-4	M2.3	M2.3	5	4	3	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	M2.3	M2.3	5	5	3	4		
TPS-M2.3-6	M2.3	M2.3	5	6	4	4		
TPS-M2.3-7	M2.3	M2.3	5	7	5	4		
TPS-M2.3-8	M2.3	M2.3	5	8	6	4		
TPS-M2.3-10	M2.3	M2.3	5	10	6	4		
TPS-M2.3-12	M2.3	M2.3	5	12	6	4		
TPS-M2.6-4	M2.6	M2.6	5	4	3	4		PF • PFF series (M2.6 boss models) WP series (M2.6 boss models)
TPS-M2.6-5	M2.6	M2.6	5	5	3	4		
TPS-M2.6-7	M2.6	M2.6	5	7	5	4		
TPS-M2.6-10	M2.6	M2.6	5	10	6	4		
TPS-M2.6-12	M2.6	M2.6	5	12	6	4	SU • OP series TWS • TW • TWN • TWF series (M3 boss models)	
TPS-M3-4	M3	M3	5.5	4	3	4		
TPS-M3-5	M3	M3	5.5	5	3	4		
TPS-M3-6	M3	M3	5.5	6	4	4		
TPS-M3-7	M3	M3	5.5	7	5	4		
TPS-M3-8	M3	M3	5.5	8	5	4		
TPS-M3-10	M3	M3	5.5	10	6	4		
TPS-M3-12	M3	M3	5.5	12	6	4		



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



MT SERIES

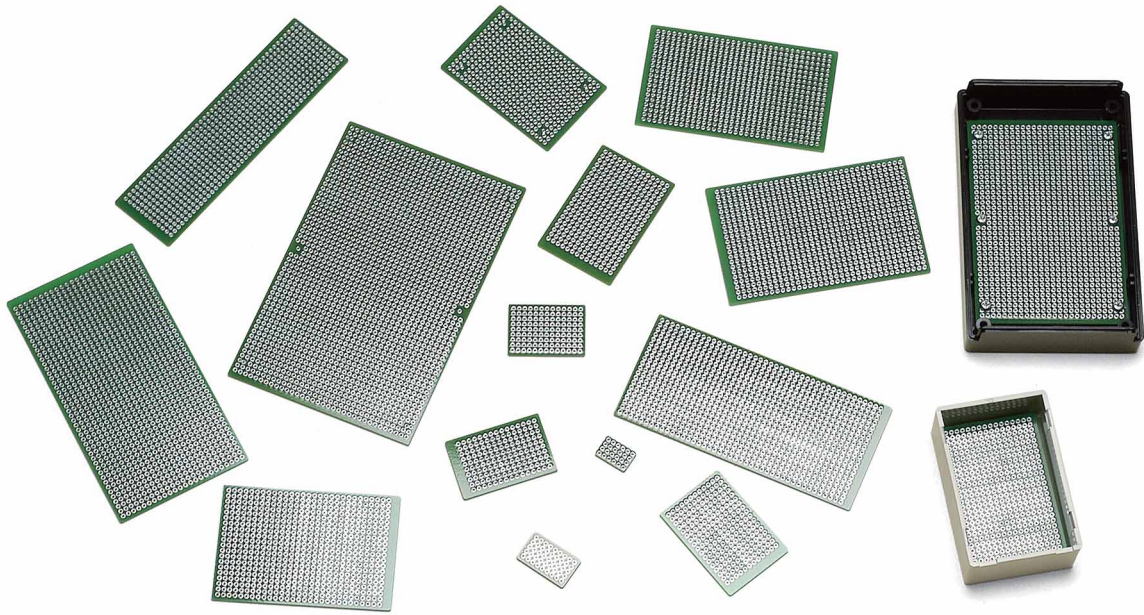
PCB MOUNTING SCREWS for TPS



- PCB mounting Screws for TPS tapping standoffs.

Product no. / Dimensions

Product no.	M	L	Head style	Material	Finish	Pack of
<b>NEW</b> MT2.3-4	2.3	4	Pan	Steel	Trivalent chromate	20
<b>NEW</b> MT2.3-6	2.3	6		Steel	Trivalent chromate	20
<b>NEW</b> MT2.6-4	2.6	4		Steel	Trivalent chromate	20
MT3-4	3	4		Steel	Trivalent chromate	20



- Material / Finish : Glass epoxy (FR-4) / Through-hole - Lead-free solder resist
- Environmentally friendly lead-free solder.
- 25 different sizes available. See chart on page TNF-2 for suitable cases/boxes.
- TNF160-240 is for multi-size use. Cut it to fit your needs when using.

**Accessories (Optional parts)**



Tapping standoff TPS series  
See page TPS • MT-1



Adhesive standoff T-600, 700 series  
See page Standoff-1

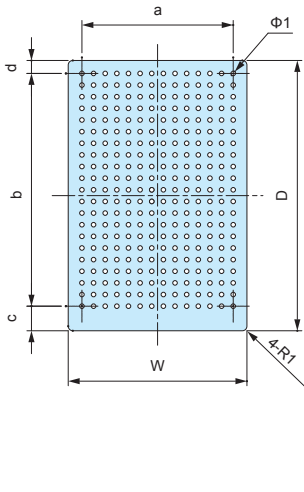


Adhesive standoff ASR series  
See page Standoff-1

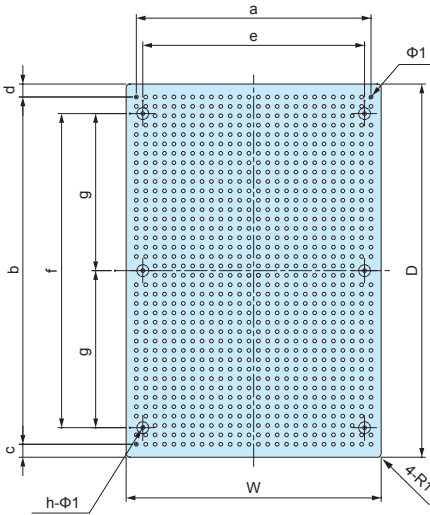


PCB mounting screw EM series  
See page EM • MR-1

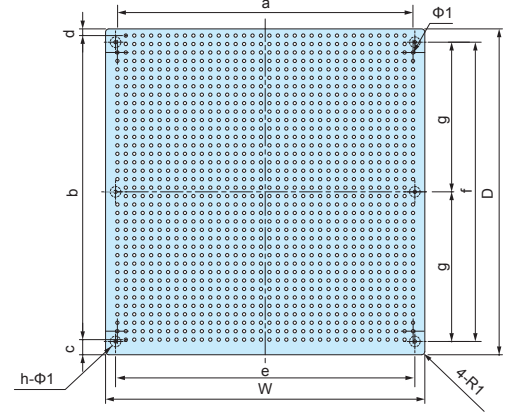
**Pattern A**



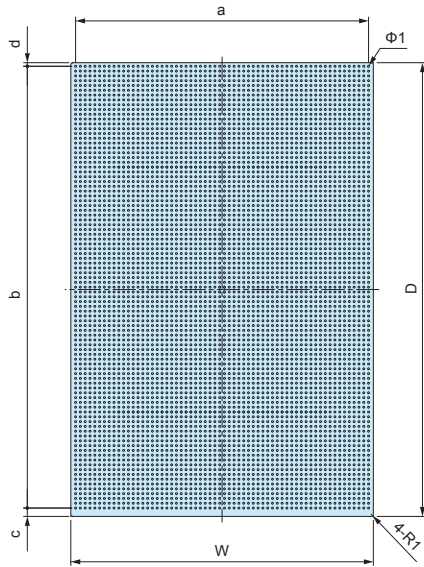
**Pattern B**



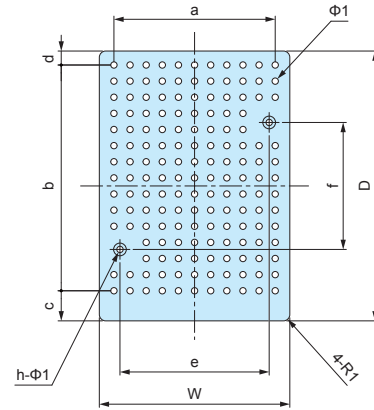
**Pattern C**



**Pattern D**



**Pattern E**



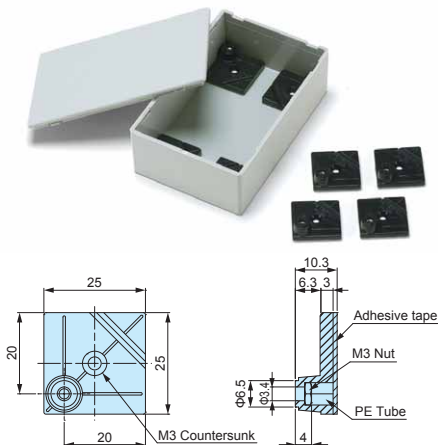
**Product no. / Dimensions**

■ Pattern B, C, and E PCBs come with holes for boss mounting.

Product no.	W	D	a	b	c	d	e	f	g	h	Holes	Pattern	Suitable case
TNF 11- 16	10.7	15.8	7.62	12.7	1.55	1.55	—	—	—	—	4 x 6	A	SW-20
TNF 15- 25	15	25	10.16	20.32	2.34	2.34	—	—	—	—	5 x 9	A	SW-30
TNF 25- 35	25	35	20.32	30.48	2.26	2.26	—	—	—	—	9 x 13	A	SW-40
TNF 29- 32	29.5	32.5	25.4	25.4	4.82	2.28	23.5	20	—	2	11 x 11 ■	E	TW • TWN4-2-5
TNF 29- 42	29.5	42.5	25.4	35.56	4.74	2.2	23.5	20	—	2	11 x 15 ■	E	TW • TWN4-2-6
TNF 29- 44	29	44	22.86	35.56	5.49	2.95	—	—	—	—	10 x 15	A	SW-50 • 53
TNF 34- 49	34	49	27.94	40.64	5.45	2.91	—	—	—	—	12 x 17	A	SW-55
TNF 34- 62	34.5	62.5	30.48	55.88	4.58	2.04	28.5	40	—	2	13 x 23 ■	E	TW • TWN4-2-8
TNF 34-124	34	124	27.94	116.84	4.85	2.31	—	—	—	—	12 x 47	A	SW-130
TNF 39- 59	39	59	33.02	50.8	5.37	2.83	—	—	—	—	14 x 21	A	
TNF 39- 70	39.5	70	33.02	60.96	5.79	3.25	27.94	58.42	—	4	14 x 25	A	TW • TWN5-3-9
TNF 43- 66	43	66	38.1	58.42	3.79	3.79	30	50	—	4	16 x 24 ■	B	
TNF 43- 79	43.5	79.5	38.1	73.66	2.92	2.92	—	—	—	—	16 x 30	A	TW5-3-10
TNF 44- 69	44	69	38.1	60.96	5.29	2.75	—	—	—	—	16 x 25	A	SW-75
TNF 52- 89	52	89	45.72	81.28	3.86	3.86	—	—	—	—	19 x 33	A	SW-95
TNF 53- 79	53	79	48.26	71.12	5.21	2.67	—	—	—	—	20 x 29	A	SW-85 • TW • TWN7-□-11
TNF 53-114	53	114	48.26	106.68	4.93	2.39	—	—	—	—	20 x 43	A	SW-120
TNF 59- 94	59	94	53.34	86.36	5.09	2.55	—	—	—	—	22 x 35	A	SW-100
TNF 63-119	63	119	58.42	111.76	4.89	2.35	—	—	—	—	24 x 45	A	SW-125
TNF 69-101	69	101	63.5	93.98	3.51	3.51	60	—	42.5	6	26 x 38 ■	B	
TNF 89-136	89	136	83.82	129.54	3.23	3.23	80	—	60	6	34 x 52 ■	B	
TNF 96- 98	96	98	88.9	91.44	4.55	2.01	90	90	45	6	36 x 37 ■	C	
TNF122- 99	122	99	116.84	91.44	3.78	3.78	—	—	—	—	47 x 37	A	
TNF128-136	136	128	129.54	121.92	4.31	1.77	130	120	60	6	52 x 50 ■	C	
TNF160-240	160	240	154.94	233.68	3.93	2.39	—	—	—	—	62 x 93	D	

**T-600**

**M3 INSERT NUT ADHESIVE STANDOFF**



- Double-sided adhesive tape allows the standoff to be mounted easily; allows PCB mounting in non-boss enclosures.

**NOTE**

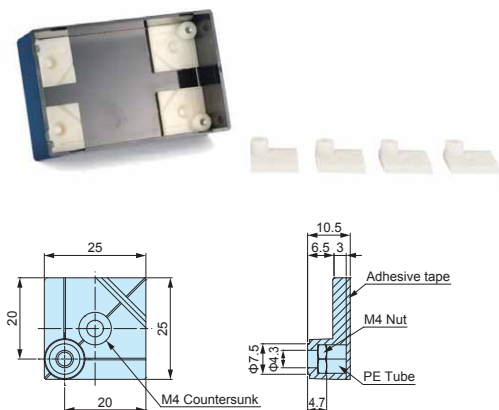
- Please ensure the surface is cleaned and grease-free before adhering.
- Once removed, it cannot be adhered on again.
- Recommended screw torque: 4kgf • cm (0.4N • m).

**Product no. / Dimensions**

Product no.	Material	Color	Weight (g)	Pack of
T-600	ABS	Black	2.6 (g) / pc	10

**T-700**

**M4 INSERT NUT ADHESIVE STANDOFF**



- Double-sided adhesive tape allows the standoff to be mounted easily; allows PCB mounting in non-boss enclosures.

**NOTE**

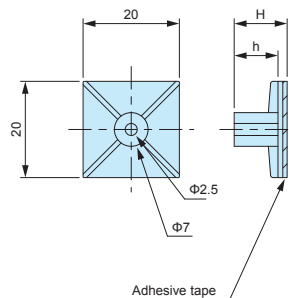
- Please ensure the surface is cleaned and grease-free before adhering.
- Once removed, it cannot be adhered on again.
- Recommended screw torque: 8.1kgf • cm (0.81N • m).

**Product no. / Dimensions**

Product no.	Material	Color	Weight (g)	Pack of
T-700	ABS	Natural	2.6 (g) / pc	10

**ASR SERIES**

**ADHESIVE STANDOFF**



- M3 tapping screw use adhesive standoff. Recommended to be used with EM-3 or EM-3-6 tapping screws (See page EM • MR-1).

**NOTE**

- Please ensure the surface is cleaned and grease-free before adhering.
- Once removed, it cannot be adhered on again.
- Recommended screw torque: 4kgf • cm (0.4N • m).

**Product no. / Dimensions**

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

■ Material: Nylon 66 UL94V-2

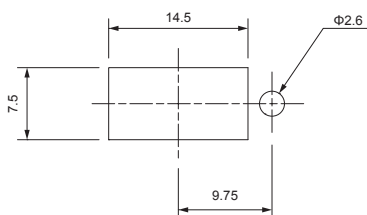
CJCV SERIES

USB DUST COVER FLAP

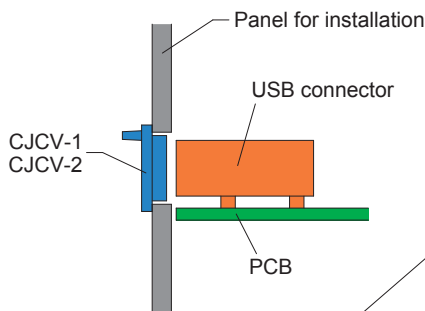


- USB TYPE-A connector dust cover plug with stopper cord.
- Hole milling is required for flap installation.

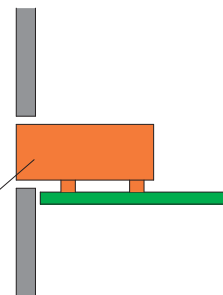
Mounting hole dimension



How to Install



Incorrect Position



- The USB connector should be mounted such that it does not protrude out from the panel's inner side.

Product no. / Feature

Product no.	Material	Color	Panel thickness	A	Pack of
NEW CJCV-1	TPU	Black	0.5 ~ 2.0mm	8	10
NEW CJCV-2	TPU	Black	2.0 ~ 12.0mm	18.2	10

USBC SERIES

USB TYPE-A DUSTPROOF BLIND PLUG



USB TYPE-A

- Easy insertion plug for USB type-A connector

USBC-2 (Pull-tab type)



USBC-8 (No pull-tab type)



Product no. / Feature

Product no.	Material	Color	Pack of
NEW USBC-2	ABS UL94HB	Black	10
NEW USBC-8	PA66 UL94V-2	Black	10

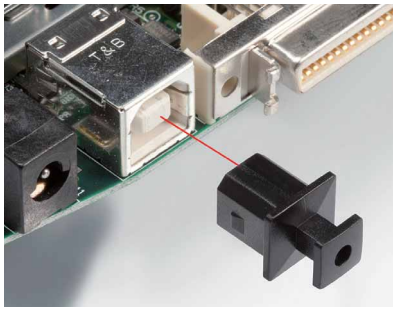
**USBC SERIES**

**USB TYPE-B • TYPE-C DUSTPROOF BLIND PLUG**



**USB TYPE-B**

USBC-1 (Pull-tab type)



USBC-3 (No pull-tab type)



Product no. / Feature

Product no.	Material	Color	Pack of
<b>NEW</b> USBC-1	ABS UL94V-0	Black	10
<b>NEW</b> USBC-3	PP UL94HB	Black	10

**USB TYPE-C**

USBC-3C



USB Type-C connector



Product no. / Feature

Product no.	Material	Color	Pack of
<b>NEW</b> USBC-3C	PE	Black	10

**USBC SERIES**

**MINI USB • MICRO USB DUSTPROOF BLIND PLUG**



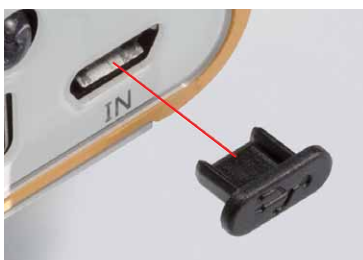
**MINI USB** USBC-10



Product no. / Feature

Product no.	Material	Color	Pack of
<b>NEW</b> USBC-10	TPE	Black	10

**MICRO USB** USBC-31



Product no. / Feature

Product no.	Material	Color	Pack of
<b>NEW</b> USBC-31	PE	Black	10

**KPS SERIES**

**USB DUSTPROOF CONNECTOR COVER**

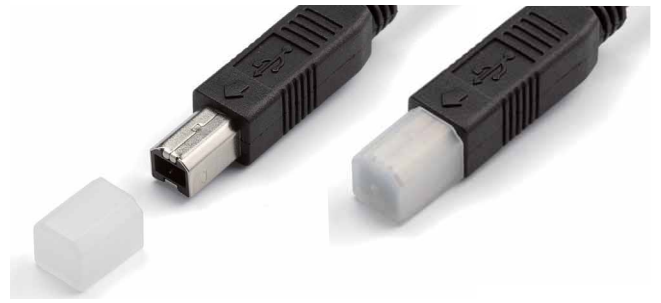
**USB TYPE-A**



**Product no. / Feature**

Product no.	Material	Color	Pack of
KPS-6	PE	Natural	10

**USB TYPE-B**



**Product no. / Feature**

Product no.	Material	Color	Pack of
KPS-5	PE	Natural	10

**MINI USB**



**Product no. / Feature**

Product no.	Material	Color	Pack of
KPS-20	PE	Natural	10

**MICRO USB**

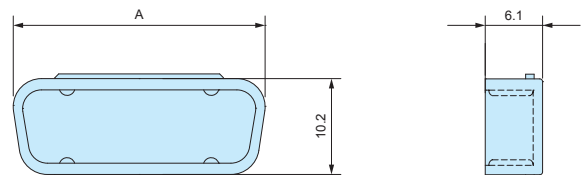


**Product no. / Feature**

Product no.	Material	Color	Pack of
KPS-21	PE	Natural	10

**DTC SERIES**

**D-SUB • DVI DUSTPROOF CONNECTOR COVER**



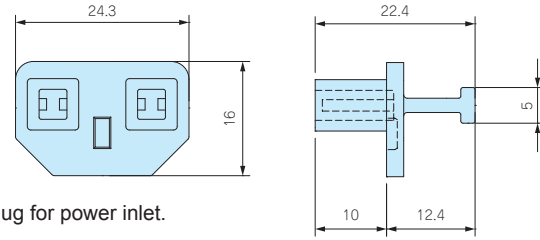
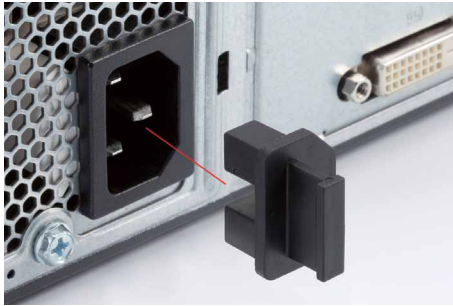
**Product no. / Feature**

Product no.	Matching connector	A	Material	Color	Pack of
DTC- 9F	D-sub 9 pin	18.5	PP UL94HB	Gray	10
DTC-15F	D-sub 15 pin • DVI	26.8	PP UL94HB	Gray	10
DTC-25F	D-sub 25 pin	40.6	PP UL94HB	Gray	10



**PLC-3TV**

**POWER INLET DUSTPROOF BLIND PLUG**



■ Pull-tab type blind plug for power inlet.

**Product no. / Feature**

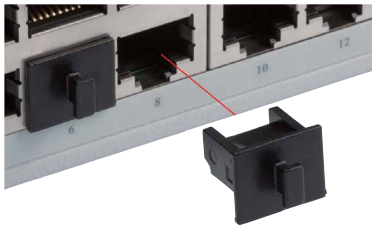
Product no.	Material	Color	Pack of
PLC-3TV	TPE UL94V-0	Black	5

**PJR • PJS SERIES**

**RJ45 DUSTPROOF BLIND PLUG**

PJR-45 (Pull-tab type)

PJS-45 (No pull-tab type)



**Product no. / Feature**

Product no.	Material	Color	Pack of
PJR-45	PE	Black	10
PJS-45	ABS UL94HB	Black	10

**PJCV-1**

**RJ45 DUSTPROOF CONNECTOR COVER**



**Product no. / Feature**

Product no.	Material	Color	Pack of
PJCV-1	PE	Natural	10

**HDMIC SERIES**

**HDMI DUSTPROOF BLIND PLUG**



HDMIC-1 (Pull-tab type)

HDMIC-3 (No pull-tab type)

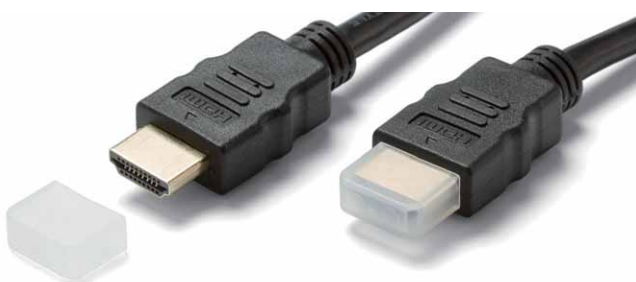


**Product no. / Feature**

Product no.	Material	Color	Pack of
HDMIC-1	PE	Black	10
HDMIC-3	ABS UL94HB	Black	10

**HDMIT SERIES**

**HDMI DUSTPROOF CONNECTOR COVER**

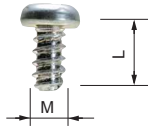


**Product no. / Feature**

Product no.	Material	Color	Pack of
HDMIT-1	PE	Natural	10

EM SERIES

PCB MOUNTING SCREW



- 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. / Dimensions

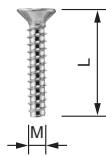
Product no.	M	L	Material	Finish	Suitable enclosures	Pack of
EM-1.6	1.6	4	Steel	Trivalent chromate	WC • CSS • CS • PS (M1.6 size)	50
EM-2	2	5	Steel	Trivalent chromate	PS • TW • TWN • TWF • WP (M2 size)	50
EM-2.3	2.3	6	Steel	Trivalent chromate	WH • LC • LCT • LCS • LCE • PFE WSC (Top cover bosses) PF • PFF (M2.3 size) TW • TWN • TWF (M2.3 size) WP (M2.3 size)	50
<b>NEW</b> EM-2.3-8	2.3	8	Steel	Trivalent chromate	WSC (Bottom base bosses)	50
EM-2.6	2.6	6	Steel	Trivalent chromate	PF • PFF • WP (M2.6 size)	50
EM-3	3	5	Steel	Trivalent chromate	SU TWS • TW • TWN • TWF (M3 sizes)	50
EM-3-6	3	6	Steel	Trivalent chromate		50

MR SERIES

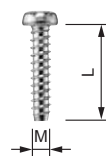
TORX SCREW



Countersunk head



Pan head



With pin



★ Without pin



★ : MR1.6-6S, MR-2S, MR2.6-10□, and MR3-14□ are without pin.

Product no. / Dimensions

★Mark = Without pin

Product no.	M	L	head no.	Head style	Material	Finish	Suitable enclosures	Pack of
MR1.6-6S★	1.6	6	T3	Pan	Steel	Nickel plated	CS • CSS	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	Countersunk	Steel	Nickel plated	TW • TWN (M2.6 models) TWF (M2.6 models)	20
MR2.6-10B★	2.6	10	T8	Countersunk	Steel	Black trivalent chromate	MX • MXA • MXB • MXF (M2.6 models)	20
MR2.6-12PS	2.6	12	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	Countersunk	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	Countersunk	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
MR3-8PS	3	8	T10	Pan	Steel	Nickel plated	PF • PFE • PFF (M3 size)	20
MR3-14S★	3	14	T10	Countersunk	Steel	Nickel plated	TW • TWN (M3 models) TWF (M3 models)	20
MR3-14B★	3	14	T10	Countersunk	Steel	Black trivalent chromate	MX • MXA • MXB • MXF (M3 models)	20
MR-2S★	3	10	T10	Countersunk	Steel	Nickel plated	HEN	20

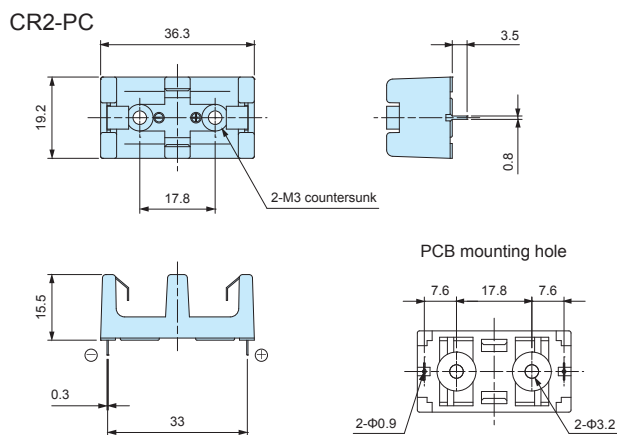
CR2•CR123A-PC SERIES

LITHIUM BATTERY HOLDER

DXF/DWG/PDF drawings available on our website.



Technical Data
Operating temperature: -10°C ~ +60°C

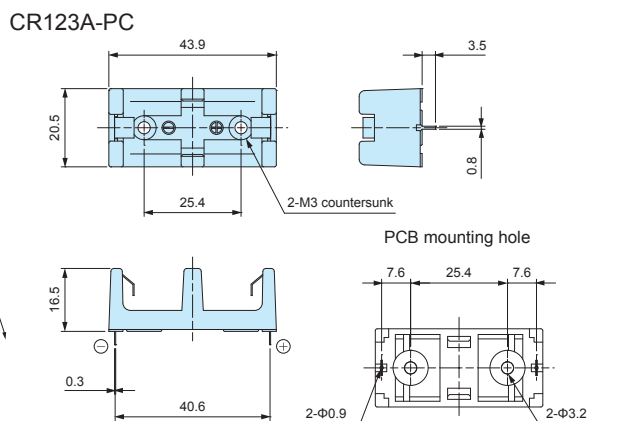


Components

Holder material	Holder color	Contact material	Contact finish
ABS UL94V-0	Black	Phosphor bronze	Nickel plated

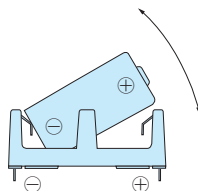
Product no. / Feature

Product no.	Battery	Mounting	Weight (g)
CR2-PC	CR2×1	Through-hole mount pin x 2	4.3
CR123A-PC	CR123A×1	Through-hole mount pin x 2	5.0



Caution

Please remove the battery from the positive (+) side. Removing it from the negative (-) side may damage the battery or the battery contacts.

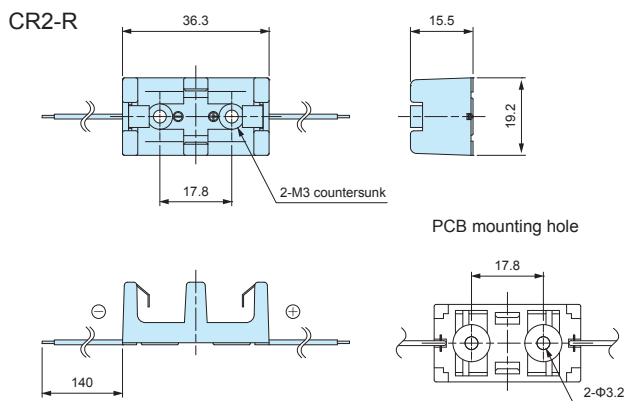


CR2•CR123A-R SERIES

LITHIUM BATTERY HOLDER with LEAD WIRE



Technical Data
Operating temperature: -10°C ~ +60°C

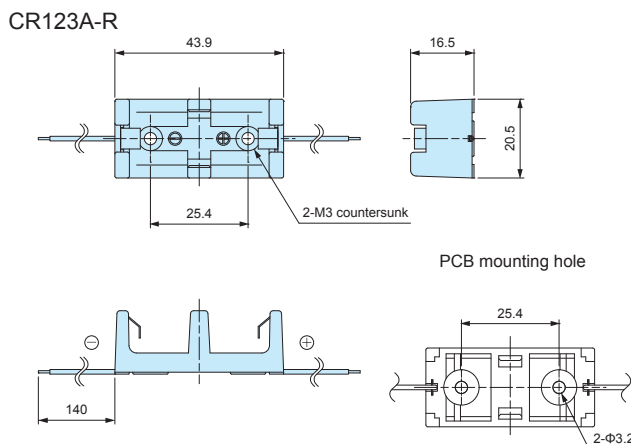


Components

Holder material	Holder color	Contact material	Contact finish
ABS UL94V-0	Black	Phosphor bronze	Nickel plated

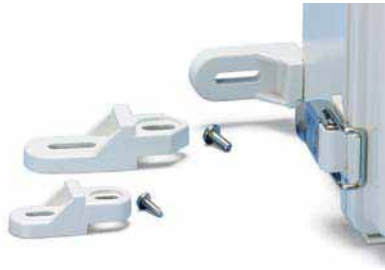
Product no. / Feature

Product no.	Battery	Lead wire	Weight (g)
CR2-R	CR2×1	UL1007 AWG26 L=140	5.3
CR123A-R	CR123A×1	UL1007 AWG26 L=140	6.0



DXF/DWG/PDF drawings available on our website.

# IP65 LATCH-HINGED PLASTIC BOX



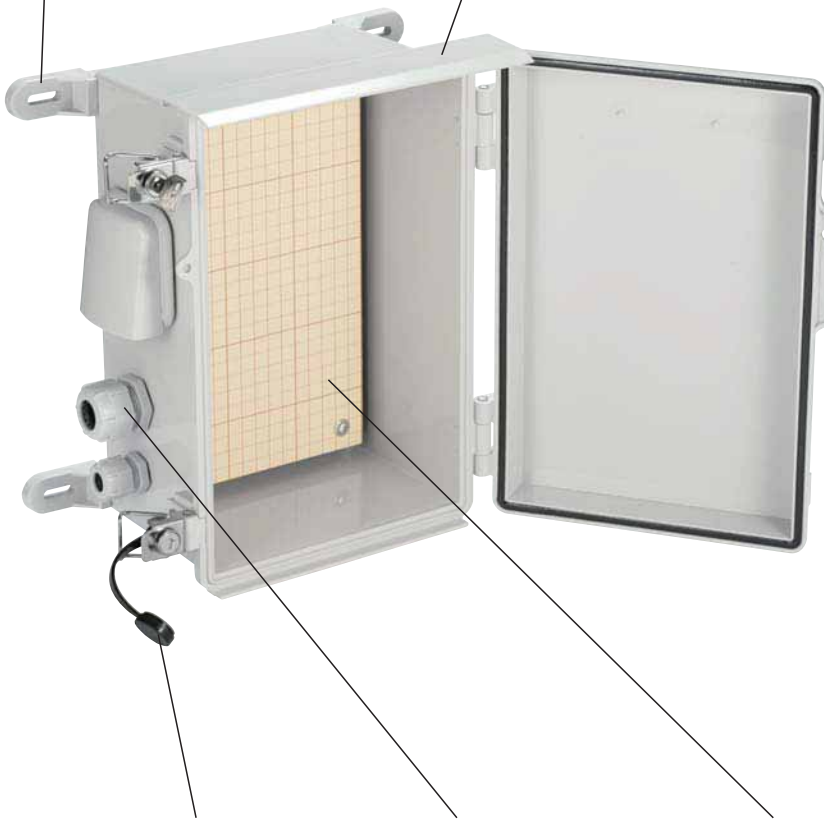
Stainless steel and plastic mounting brackets are available. See page 256



BCAR • BCPR series comes with an attachable BRF series outdoor roof. See page 245 ~ 246 and 251 ~ 252



Pole mounting bracket for pole installation See page 257 ~ 258



Dust protection cap (for lock/key type) See page 252



Cable gland For waterproofing enclosure openings for cables and wires See cable gland pages



Mounting plate 3 types of mounting plates are available (plastic / steel / wood) See page 253 ~ 255



Ventilation cover For heat dissipation and prevention of condensation build-up See page 262

# APPLICATION EXAMPLE

Universal plastic enclosure series suitable for a wide range of applications such as FA/control, electrical switchboard, network communication and so on.

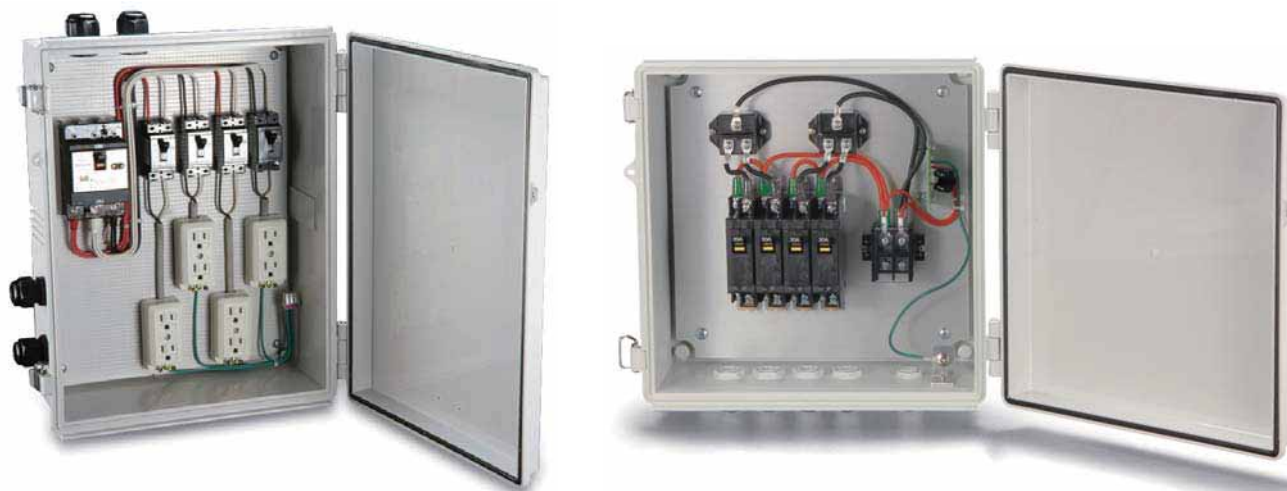
## OUTDOOR WiFi SPOT Product by Spectra Quest Lab. (Japan)



## SOLAR POWER JUNCTION BOX Product by Kansai Denki (Japan)

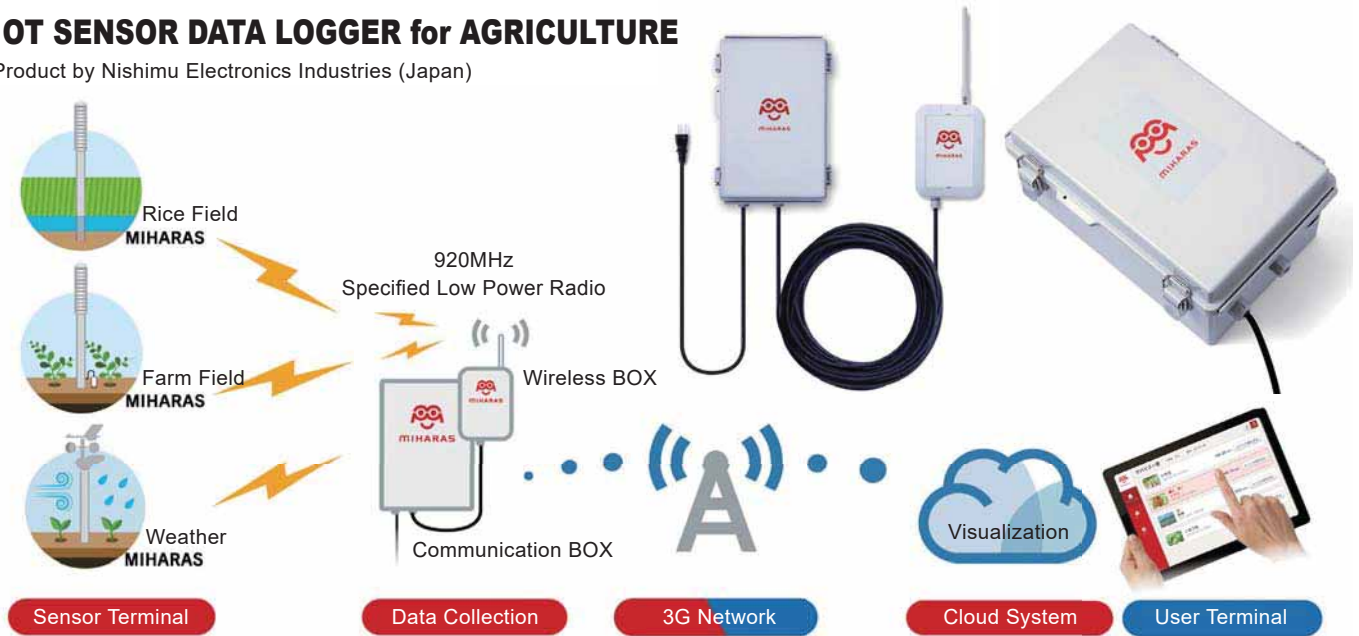


## POWER SWITCHBOARD BOX



## IOT SENSOR DATA LOGGER for AGRICULTURE

Product by Nishimu Electronics Industries (Japan)



## Environmental Data Measurement and Controller Unit

Product by eSOL (Japan)



## "SenSu" COMMUNICATION UNIT with SENSOR

Product by DATA TECHNOLOGY (Japan)



## NETWORK SENSOR SYSTEM for AGRICULTURE

Product by CM Engineering (Japan)



## WILDLIFE DAMAGE MONITORING SYSTEM

Product by CM Engineering (Japan)



**VALVE CONTROLLER**

Product by EXEN (Japan)



**BUILDING SURVEILLANCE UNIT**

Product by Showa Denki (Japan)



**DIGITAL PRESSURE GAUGE**

Product by KRONE CORPORATION (Japan)



**RADIATION MONITOR**



**POWER SAVER for AIR CONDITIONING**

Product by Synapes (Japan)

**ANEMOMETER**

Product by Fieldpro (Japan)



**WATER GAUGE**

Product by Fieldpro (Japan)



**GROUND EXTENSOMETER**

Product by GeotechService (Japan)

**MONITORING CAMERA**

Product by ACE PROMOTION (Japan)

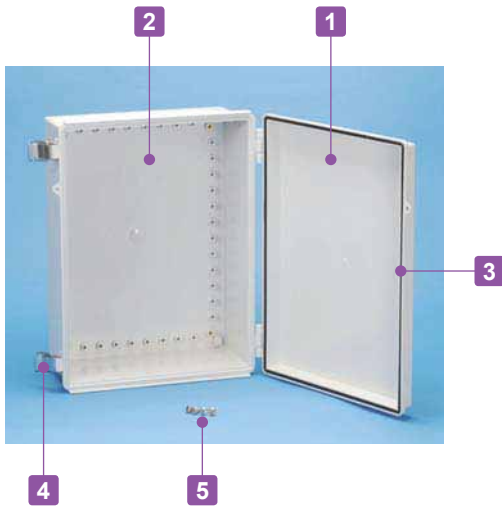


**BCAP SERIES**

**IP65 LATCH-HINGED ABS PLASTIC BOX**

**BCPC SERIES**

**IP65 LATCH-HINGED POLYCARBONATE PLASTIC BOX**



Technical Data	
Protection class:	IP65
Operating temperature:	
BCAP	-10°C ~ +60°C
BCPC	-20°C ~ +75°C

■ UL mark is only applicable for BCPC series

- 50 different sizes available.
- BCAP series is made of white gray ABS with 2 different cover types (white gray ABS and transparent polycarbonate) available.
- BCPC series is made of light gray UL94V-0 polycarbonate, which has good heat resistance properties.
- Applicable for various uses in fields such as FA, network communication, power switchbox controls and so on.

**Components: BCAP series**

■ Box UL class = UL94HB

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS • Polycarbonate	White gray • Transparent
2	Base	1	ABS	White gray
3	Gasket	1	Polyurethane	Black
4	Latch	1 ~ 3	Stainless steel	Unfinished
5	Screw	2 ~ 8	Steel	Trivalent chromate

■ Stainless steel mounting brackets are included together with the following models: 506018, 506025, 507018, 507025, 608018, and 608028.

**Components: BCPC series**

■ Box UL class = UL94V-0

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	Polycarbonate	Light gray
2	Base	1	Glass fiber filled polycarbonate	Light gray
3	Gasket	1	Polyurethane	Black
4	Latch	1 ~ 3	Stainless steel	Unfinished
5	Screw	2 ~ 8	Steel	Trivalent chromate

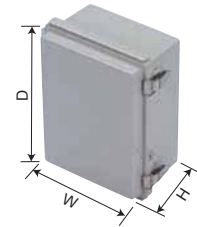
■ Stainless steel mounting brackets are included together with the following models: 506018, 506025, 507018, 507025, 608018, and 608028.



Color Type

Color code	Cover color / Material	Base color / Material
BCAP[G]	White gray / ABS	White gray / ABS
BCAP[T]	Transparent / Polycarbonate	White gray / ABS
BCPC[S]	Light gray / Polycarbonate	Light gray / Glass fiber filled polycarbonate

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



BCAP Product no. / Dimensions

Product no.	W	D	H	Weight (g)	
				G	T
BCAP091207□	90	120	70	196	204
BCAP091208□	90	120	85	212	221
BCAP101507□	100	150	70	272	281
BCAP101508□	100	150	85	291	300
BCAP112107□	110	210	75	359	378
BCAP112110□	110	210	100	422	420
BCAP112607□	110	260	75	431	446
BCAP112610□	110	260	100.5	484	500
BCAP131508□	135	155	85	356	357
BCAP131808□	135	185	85.5	381	410
BCAP131810□	135	185	100.5	396	402
BCAP151509□	150	150	90	343	353
BCAP151512□	150	150	120.5	411	425
BCAP162110□	160	210	100	468	486
BCAP162113□	160	210	130	517	537
BCAP162610□	160	260	100	577	601
BCAP162613□	160	260	130	673	701
BCAP172211□	170	220	110.5	530	556
BCAP172711□	170	270	110.5	670	680
BCAP192810□	190	280	100.5	722	746
BCAP192814□	190	280	141	877	901
BCAP203013□	200	300	131.5	920	951
BCAP203015□	200	300	151.5	958	984
BCAP203018□	200	300	180.5	1,066	1,084
BCAP212110□	210	210	100	630	656
BCAP212113□	210	210	130	704	726
BCAP253515□	250	350	151	1,261	1,332
BCAP253518□	250	350	181.5	1,397	1,464
BCAP282813□	280	280	130.5	1,167	1,200
BCAP283813□	280	380	130	1,455	1,512
BCAP303015□	300	300	151	1,339	1,418
BCAP303018□	300	300	181	1,495	1,576
BCAP304012□	300	400	121	1,508	1,575
BCAP304015□	300	400	150	1,563	1,675
BCAP304018□	300	400	181	1,719	1,853
BCAP353515□	350	350	150	1,693	1,764
BCAP353518□	350	350	181	1,845	1,906
BCAP354512□	350	450	120	2,068	2,167
BCAP354516□	350	450	160	2,382	2,514
BCAP354520□	350	450	201	2,646	2,794
BCAP405016□	400	500	160	2,660	2,839
BCAP405020□	400	500	201	3,119	3,232
BCAP406018□	400	600	181	3,542	3,652
BCAP406023□	400	600	231	3,870	4,044
BCAP506018□	530	630	185	5,438	5,611
BCAP506025□	530	630	255	6,078	6,273
BCAP507018G	530	730	188	6,241	-
BCAP507025G	530	730	255	6,911	-
BCAP608018G	630	830	188	8,131	-
BCAP608028G	630	830	288	9,570	-

■ BCAP507018, 507025, 608018, 608028 models are only available as G color type.

BCPC Product no. / Dimensions

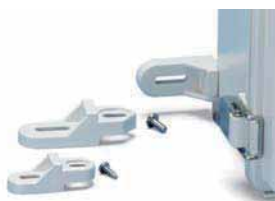
Product no.	W	D	H	Weight (g)
BCPC091207S	90	120	70	226
BCPC091208S	90	120	85	247
BCPC101507S	100	150	70	312
BCPC101508S	100	150	85	336
BCPC112107S	110	210	75	420
BCPC112110S	110	210	100	473
BCPC112607S	110	260	75	493
BCPC112610S	110	260	100.5	569
BCPC131508S	135	155	85	406
BCPC131808S	135	185	85.5	452
BCPC131810S	135	185	100.5	448
BCPC151509S	150	150	90	395
BCPC151512S	150	150	120.5	482
BCPC162110S	160	210	100	556
BCPC162113S	160	210	130	611
BCPC162610S	160	260	100	671
BCPC162613S	160	260	130	779
BCPC172211S	170	220	110.5	649
BCPC172711S	170	270	110.5	775
BCPC192810S	190	280	100.5	858
BCPC192814S	190	280	141	1,028
BCPC203013S	200	300	131.5	1,053
BCPC203015S	200	300	151.5	1,127
BCPC203018S	200	300	180.5	1,258
BCPC212110S	210	210	100	742
BCPC212113S	210	210	130	827
BCPC253515S	250	350	151	1,491
BCPC253518S	250	350	181.5	1,676
BCPC282813S	280	280	130.5	1,371
BCPC283813S	280	380	130	1,695
BCPC303015S	300	300	151	1,610
BCPC303018S	300	300	181	1,760
BCPC304012S	300	400	121	1,846
BCPC304015S	300	400	150	1,862
BCPC304018S	300	400	181	2,030
BCPC353515S	350	350	150	2,045
BCPC353518S	350	350	181	2,142
BCPC354512S	350	450	120	2,397
BCPC354516S	350	450	160	2,826
BCPC354520S	350	450	201	3,151
BCPC405016S	400	500	160	3,188
BCPC405020S	400	500	201	3,811
BCPC406018S	400	600	181	4,153
BCPC406023S	400	600	231	4,637
BCPC506018S	530	630	185	6,305
BCPC506025S	530	630	255	7,213
BCPC507018S	530	730	188	7,410
BCPC507025S	530	730	255	8,200
BCPC608018S	630	830	188	9,820
BCPC608028S	630	830	288	11,550

■ Refer to page 247 ~ 250 for detailed dimensions.

Accessories (Optional parts)



Mounting plate BMP series  
See page 253 ~ 255



Mounting bracket CK • BFL series  
See page 256



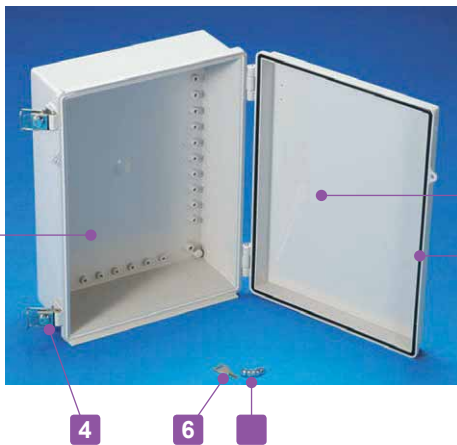
Pole mounting bracket SSK series  
See page 257 ~ 258



Cable gland  
See cable gland pages



Ventilation part  
See page 259 ~ 262



**Technical Data**

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

※Lock types vary according to box size.



- Lockable enclosure best used for tamper prevention in FA, control box, and network communication fields.
- BCPK polycarbonate box is resistant against heat and flames.
- Transparent type is not available for BCPK507018, 507025, 608018, and 608028 models.

Box size  
BCPK091207 ~ 172711  
BCPK212110 and 212113

Box size  
BCPK192810 ~ 203018  
BCPK253515 and 608028

**Components**

■ Box UL class = UL94V-0

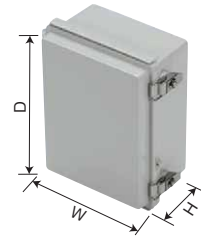
No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	Polycarbonate	Light gray • Transparent
2	Base	1	Glass fiber filled polycarbonate	Light gray
3	Gasket	1	Polyurethane	Black
4	Latch	1 ~ 3	Stainless steel	Unfinished
5	Screw	2 ~ 8	Steel	Trivalent chromate
6	Key	1 ~ 2	Diecast zinc • Brass	Chrome plated • Nickel plated

- Stainless steel mounting brackets are included together with the following models: 506018, 506025, 507018, 507025, 608018, and 608028.
- Quantity of keys provided vary by the number of locks present.

Color Type

Color code	Cover color / Material	Base color / Material
BCPK <span style="border: 1px solid black; padding: 0 2px;">S</span>	Light gray / Polycarbonate	Light gray / Glass fiber filled polycarbonate
<b>NEW</b> BCPK <span style="border: 1px solid black; padding: 0 2px;">T</span>	Transparent / Polycarbonate	Light gray / Glass fiber filled polycarbonate

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



Product no. / Dimensions

Product no.	W	D	H	Weight (g)	
				S	T
BCPK091207□	90	120	70	242	237
BCPK091208□	90	120	85	264	261
BCPK101507□	100	150	70	339	337
BCPK101508□	100	150	85	360	355
BCPK112107□	110	210	75	437	444
BCPK112110□	110	210	100	501	509
BCPK112607□	110	260	75	520	528
BCPK112610□	110	260	100.5	585	594
BCPK131508□	135	155	85	430	421
BCPK131808□	135	185	85.5	474	475
BCPK131810□	135	185	100.5	471	478
BCPK151509□	150	150	90	419	422
BCPK151512□	150	150	120.5	507	508
BCPK162110□	160	210	100	563	572
BCPK162113□	160	210	130	630	639
BCPK162610□	160	260	100	728	738
BCPK162613□	160	260	130	805	825
BCPK172211□	170	220	110.5	664	681
BCPK172711□	170	270	110.5	771	794
BCPK192810□	190	280	100.5	875	900
BCPK192814□	190	280	141	1,065	1,094
BCPK203013□	200	300	131.5	1,090	1,119
BCPK203015□	200	300	151.5	1,182	1,214
BCPK203018□	200	300	180.5	1,295	1,330
BCPK212110□	210	210	100	743	756
BCPK212113□	210	210	130	822	847
BCPK253515□	250	350	151	1,559	1,606
BCPK253518□	250	350	181.5	1,670	1,720
BCPK282813□	280	280	130.5	1,391	1,433
BCPK283813□	280	380	130	1,811	1,733
BCPK303015□	300	300	151	1,670	1,682
BCPK303018□	300	300	181	1,782	1,795
BCPK304012□	300	400	121	1,858	1,872
BCPK304015□	300	400	150	1,912	1,926
BCPK304018□	300	400	181	2,083	2,098
BCPK353515□	350	350	150	2,067	1,999
BCPK353518□	350	350	181	2,175	2,163
BCPK354512□	350	450	120	2,442	2,429
BCPK354516□	350	450	160	2,863	2,848
BCPK354520□	350	450	201	3,156	3,140
BCPK405016□	400	500	160	3,149	3,152
BCPK405020□	400	500	201	3,725	3,729
BCPK406018□	400	600	181	4,159	4,164
BCPK406023□	400	600	231	4,639	4,645
BCPK506018□	530	630	185	5,339	6,151
BCPK506025□	530	630	255	7,136	8,220
BCPK507018S	530	730	188	7,470	—
BCPK507025S	530	730	255	8,260	—
BCPK608018S	630	830	188	9,880	—
BCPK608028S	630	830	288	11,610	—

■ BCPK507018, 507025, 608018, 608028 models are only available as S color type. ■ Refer to page 247 ~ 250 for detailed dimensions.

Accessories (Optional parts)



Dust protection cap BCC series  
See page 252

Mounting plate BMP series  
See page 253 ~ 255

Mounting bracket CK • BFL series  
See page 256

Cable gland  
See page 265 ~ 272

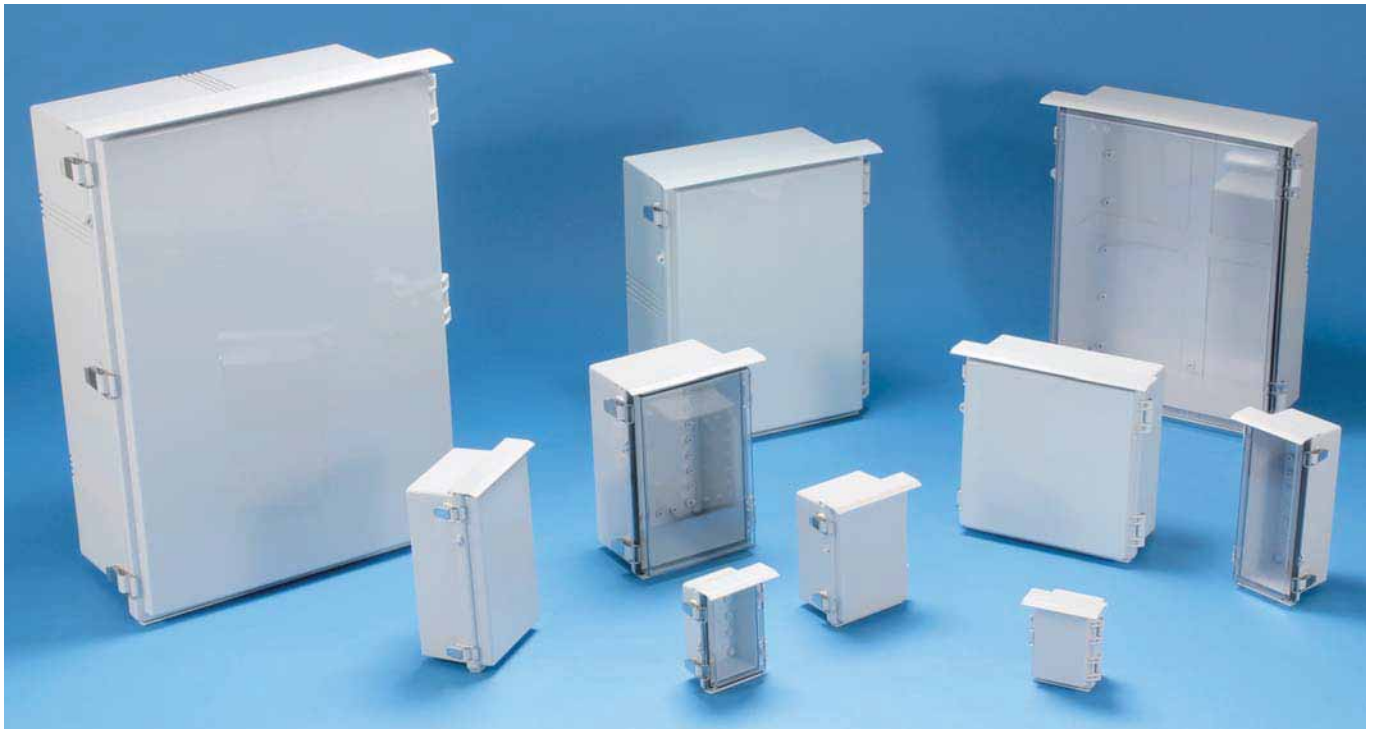
Ventilation part  
See page 259 ~ 262

**BCAR SERIES**

**IP65 ABS PLASTIC BOX with OUTDOOR ROOF**

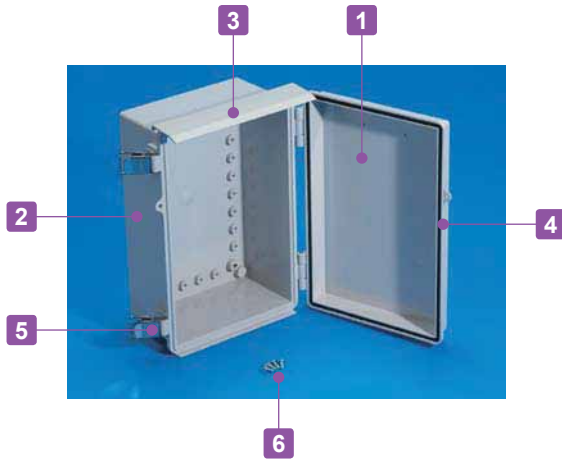
**BCPR SERIES**

**IP65 POLYCARBONATE PLASTIC BOX with OUTDOOR ROOF**



**Technical Data**

Protection class: IP65  
 Operating temperature:  
 BCAR -10°C ~ +60°C  
 BCPR -20°C ~ +75°C



- Suitable for outdoor use by equipping easy snap-on roof attachment.
- 45 different sizes available.
- BCAR series is made of white gray ABS with 2 different cover type (white gray ABS and transparent polycarbonate).
- BCPR series is made of light gray UL94V-0 polycarbonate, which has good heat resistance properties.
- Transparent cover type is not available for BCAR507018, 507025, 608018, and 608028 models.

**Components: BCAR series**

■ Box UL class = UL94HB

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS • Polycarbonate	White gray • Transparent
2	Base	1	ABS	White gray
3	Roof	1	PVC	White gray
4	Gasket	1	Polyurethane	Black
5	Latch	1~3	Stainless steel	Unfinished
6	Screw	2~8	Steel	Trivalent chromate

■ Stainless steel mounting brackets are included together with the following models: 506018, 506025, 507018, 507025, 608018, and 608028.

**Components: BCPR series**

■ Box UL class = UL94V-0

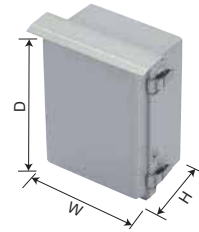
No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	Polycarbonate	Light gray
2	Base	1	Glass fiber filled polycarbonate	Light gray
3	Roof	1	PVC	Light gray
4	Gasket	1	Polyurethane	Black
5	Latch	1~3	Stainless steel	Unfinished
6	Screw	2~8	Steel	Trivalent chromate

■ Stainless steel mounting brackets are included together with the following models: 506018, 506025, 507018, 507025, 608018, and 608028.

Color Type

Code	Cover color / Material	Base color / Material
BCAR[G]	White gray / ABS	White gray / ABS
BCAR[T]	Transparent / Polycarbonate	White gray / ABS
BCPR[S]	Light gray / Polycarbonate	Light gray / Glass fiber filled polycarbonate

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



BCAR Product no. / Dimensions

Product no.	W	D	H	Weight (g)	
				G	T
BCAR091207□	90	120	70	213	220
BCAR091208□	90	120	85	228	237
BCAR101507□	100	150	70	291	300
BCAR101508□	100	150	85	309	318
BCAR112107□	110	210	75	379	398
BCAR112110□	110	210	100	442	440
BCAR112607□	110	260	75	451	466
BCAR112610□	110	260	100.5	504	519
BCAR131508□	135	155	85	379	381
BCAR131808□	135	185	85.5	404	434
BCAR131810□	135	185	100.5	420	426
BCAR162110□	160	210	100	495	513
BCAR162113□	160	210	130	544	564
BCAR162610□	160	260	100	605	629
BCAR162613□	160	260	130	701	729
BCAR172211□	170	220	110.5	560	586
BCAR172711□	170	270	110.5	700	710
BCAR192810□	190	280	100.5	755	778
BCAR192814□	190	280	141	909	933
BCAR203013□	200	300	131.5	957	989
BCAR203015□	200	300	151.5	995	1,022
BCAR203018□	200	300	180.5	1,104	1,122
BCAR212110□	210	210	100	666	692
BCAR212113□	210	210	130	740	762
BCAR253515□	250	350	151	1,307	1,378
BCAR253518□	250	350	181.5	1,443	1,510
BCAR282813□	280	280	130.5	1,218	1,251
BCAR283813□	280	380	130	1,506	1,563
BCAR303015□	300	300	151	1,393	1,472
BCAR303018□	300	300	181	1,549	1,630
BCAR304012□	300	400	121	1,562	1,629
BCAR304015□	300	400	150	1,617	1,729
BCAR304018□	300	400	181	1,773	1,907
BCAR353515□	350	350	150	1,757	1,827
BCAR353518□	350	350	181	1,908	1,970
BCAR354512□	350	450	120	2,140	2,239
BCAR354516□	350	450	160	2,454	2,586
BCAR354520□	350	450	201	2,718	2,866
BCAR506018□	530	630	185	5,564	5,737
BCAR506025□	530	630	255	6,203	6,399
BCAR507018G	530	730	188	6,366	—
BCAR507025G	530	730	255	7,037	—
BCAR608018G	630	830	188	8,279	—
BCAR608028G	630	830	288	9,719	—

■ BCAR507018, 507025, 608018, 608028 models are only available as G color type.

BCPR Product no. / Dimensions

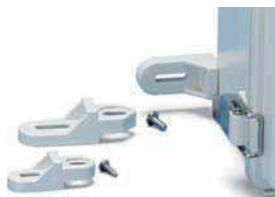
Product no.	W	D	H	Weight (g)
BCPR091207S	90	120	70	242
BCPR091208S	90	120	85	264
BCPR101507S	100	150	70	330
BCPR101508S	100	150	85	354
BCPR112107S	110	210	75	439
BCPR112110S	110	210	100	493
BCPR112607S	110	260	75	513
BCPR112610S	110	260	100.5	589
BCPR131508S	135	155	85	429
BCPR131808S	135	185	85.5	475
BCPR131810S	135	185	100.5	471
BCPR162110S	160	210	100	583
BCPR162113S	160	210	130	638
BCPR162610S	160	260	100	699
BCPR162613S	160	260	130	806
BCPR172211S	170	220	110.5	677
BCPR172711S	170	270	110.5	803
BCPR192810S	190	280	100.5	889
BCPR192814S	190	280	141	1,060
BCPR203013S	200	300	131.5	1,091
BCPR203015S	200	300	151.5	1,165
BCPR203018S	200	300	180.5	1,296
BCPR212110S	210	210	100	777
BCPR212113S	210	210	130	862
BCPR253515S	250	350	151	1,537
BCPR253518S	250	350	181.5	1,722
BCPR282813S	280	280	130.5	1,422
BCPR283813S	280	380	130	1,747
BCPR303015S	300	300	151	1,665
BCPR303018S	300	300	181	1,814
BCPR304012S	300	400	121	1,901
BCPR304015S	300	400	150	1,917
BCPR304018S	300	400	181	2,084
BCPR353515S	350	350	150	2,109
BCPR353518S	350	350	181	2,206
BCPR354512S	350	450	120	2,471
BCPR354516S	350	450	160	2,899
BCPR354520S	350	450	201	3,224
BCPR506018S	530	630	185	6,431
BCPR506025S	530	630	255	7,339
BCPR507018S	530	730	188	7,630
BCPR507025S	530	730	255	8,420
BCPR608018S	630	830	188	10,040
BCPR608028S	630	830	288	11,770

■ Refer to page 247 ~ 250 for detailed dimensions.

Accessories (Optional parts)



Mounting plate BMP series  
See page 253 ~ 255



Mounting bracket CK • BFL series  
See page 256



Pole mounting bracket SSK series  
See page 257 ~ 258



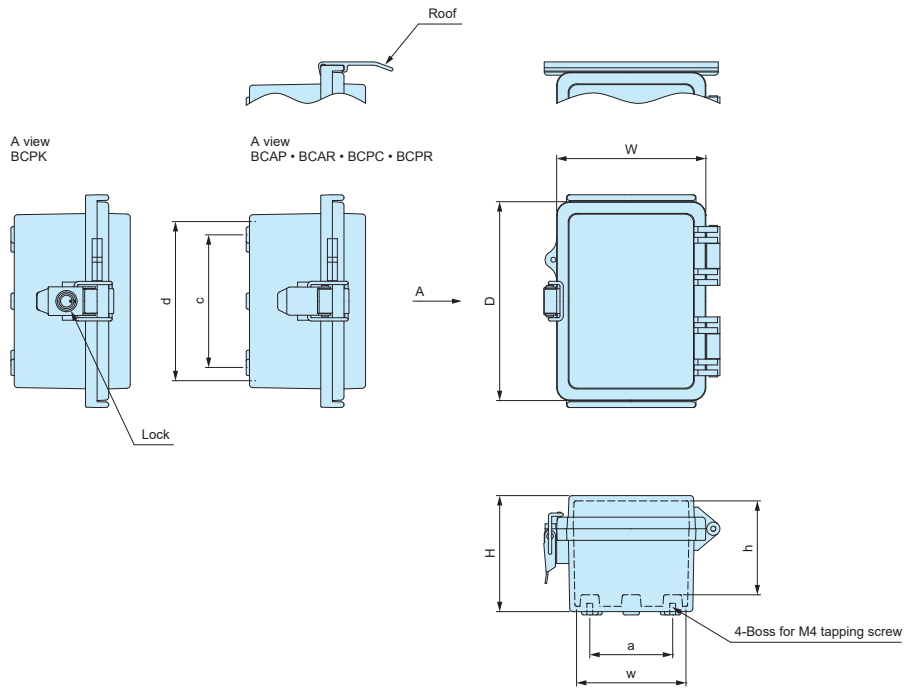
Cable gland  
See cable gland pages

Ventilation part  
See page 259 ~ 262

BCAP • BCAR • BCPC • BCPK • BCPR dimensions

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

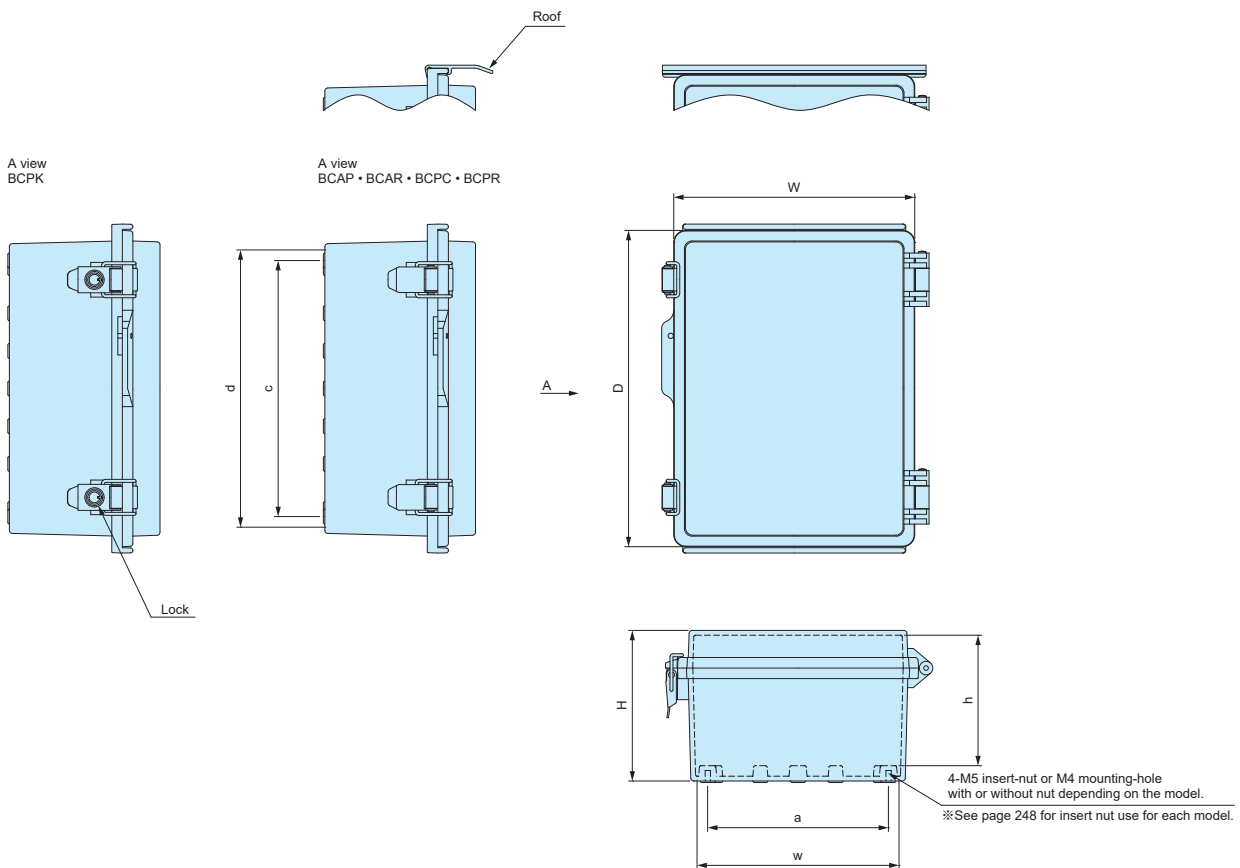
091207, 091208



Product no.	W	D	H	Available range			Bottom hole pitch	
				w	d	h	a	c
BCAP • R, BCPC • K • R091207	90	120	70	66	96	56.5	50	80
BCAP • R, BCPC • K • R091208	90	120	85	66	96	71.5	50	80

101507 ~ 405020

Not available for BCAR • BCPR 151509, 151512, 405016, and 405020 models.





■ Inner bosses vary according to box size.  
Refer to DXF/DWG/PDF drawings for more details.

APPLICATION EXAMPLE



SURVEILLANCE VIDEO DATA CLOUD ROUTER

Product by LIVELOCK TECHNOLOGIES (Japan)

Product no.	W	D	H	Available range			Bottom hole pitch		Insert nut
				w	d	h	a	c	
BCAP・R, BCPC・K・R101507	100	150	70	76	126	56.5	60	110	without
BCAP・R, BCPC・K・R101508	100	150	85	75.5	125.5	71.5	60	110	without
BCAP・R, BCPC・K・R112107	110	210	75	85.8	185.8	61.5	70	170	without
BCAP・R, BCPC・K・R112110	110	210	100	84.9	184.9	86.5	70	170	without
BCAP・R, BCPC・K・R112607	110	260	75	85.8	235.8	61.5	70	220	without
BCAP・R, BCPC・K・R112610	110	260	100.5	85.1	234.9	87.2	70	220	without
BCAP・R, BCPC・K・R131508	135	155	85	110.5	130.5	71.5	95	115	without
BCAP・R, BCPC・K・R131808	135	185	85.5	110.4	160.4	72.2	95	145	without
BCAP・R, BCPC・K・R131810	135	185	100.5	110.4	160.4	87.1	95	145	without
BCAP, BCPC・K 151509	150	150	90	125.7	125.7	75.5	120	120	without
BCAP, BCPC・K 151512	150	150	120.5	124	124	106	117	117	without
BCAP・R, BCPC・K・R162110	160	210	100	134	184	86.6	120	170	without
BCAP・R, BCPC・K・R162113	160	210	130	134	184	116.5	120	170	without
BCAP・R, BCPC・K・R162610	160	260	100	135.1	235.1	86.6	120	220	without
BCAP・R, BCPC・K・R162613	160	260	130	134	234	116.6	120	220	without
BCAP・R, BCPC・K・R172211	170	220	110.5	144.9	194.9	96.1	132	182	without
BCAP・R, BCPC・K・R172711	170	270	110.5	144.9	244.9	96.1	132	232	without
BCAP・R, BCPC・K・R192810	190	280	100.5	165.3	255.3	84.1	148	238	with
BCAP・R, BCPC・K・R192814	190	280	141	164.2	254.2	124.6	148	238	with
BCAP・R, BCPC・K・R203013	200	300	131.5	173.5	273.5	115.1	152	252	with
BCAP・R, BCPC・K・R203015	200	300	151.5	173.5	273.5	135.1	152	252	with
BCAP・R, BCPC・K・R203018	200	300	180.5	172.4	272.3	164.1	152	252	with
BCAP・R, BCPC・K・R212110	210	210	100	185.1	185.1	86.6	170	170	without
BCAP・R, BCPC・K・R212113	210	210	130	184	184	116.6	170	170	without
BCAP・R, BCPC・K・R253515	250	350	151	222.5	322.5	135.3	206	306	with
BCAP・R, BCPC・K・R253518	250	350	181.5	222.5	322.5	165.8	206	306	with
BCAP・R, BCPC・K・R282813	280	280	130.5	254	254	113.6	238	238	with
BCAP・R, BCPC・K・R283813	280	380	130	254	354	113.6	238	338	with
BCAP・R, BCPC・K・R303015	300	300	151	273	273	134.3	256	256	with
BCAP・R, BCPC・K・R303018	300	300	181	272.5	272.5	164.3	256	256	with
BCAP・R, BCPC・K・R304012	300	400	121	274.1	374.6	104.6	252	352	with
BCAP・R, BCPC・K・R304015	300	400	150	273.5	373.5	133.6	252	352	with
BCAP・R, BCPC・K・R304018	300	400	181	272.5	372.5	164.6	252	352	with
BCAP・R, BCPC・K・R353515	350	350	150	323.6	323.6	133.6	302	302	with
BCAP・R, BCPC・K・R353518	350	350	181	322.5	322.5	164.6	302	302	with
BCAP・R, BCPC・K・R354512	350	450	120	316.7	416.7	103.5	302	402	with
BCAP・R, BCPC・K・R354516	350	450	160	308.7	414.7	142.6	302	402	with
BCAP・R, BCPC・K・R354520	350	450	201	306.9	412.8	183.6	302	402	with
BCAP, BCPC・K 405016	400	500	160	360.4	466.6	144	352	452	with
BCAP, BCPC・K 405020	400	500	201	359.4	465.5	184	352.5	452.5	with

**BCAP • BCAR • BCPC • BCPK • BCPR dimensions**

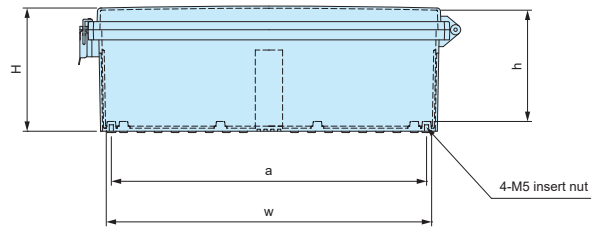
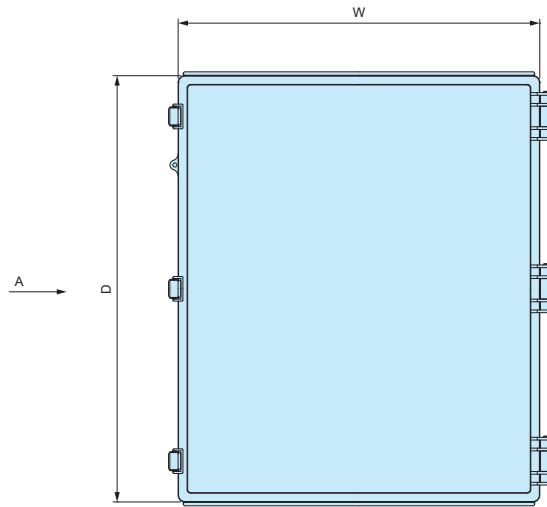
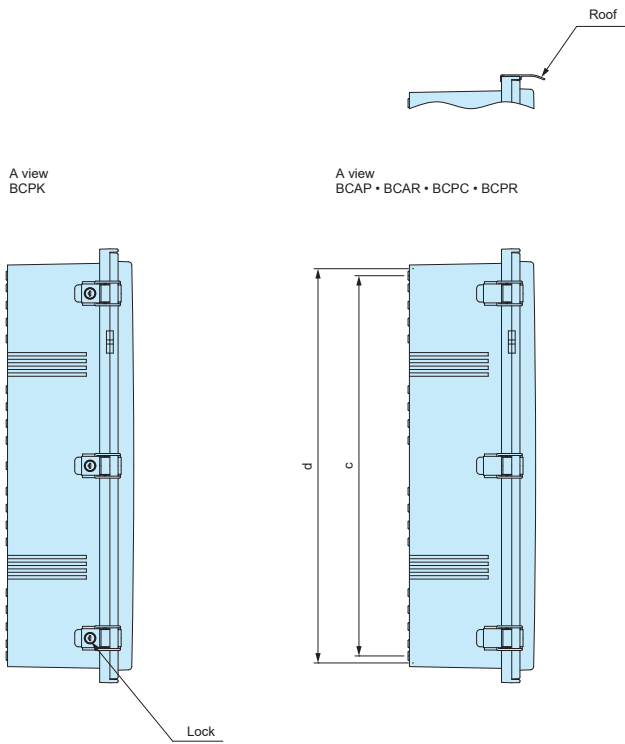
406018 ~ 507025

Not available for BCAR • BCPR 406018 and 406023 models.

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



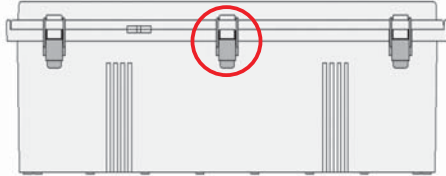
■ Inner bosses vary according to box size.  
Refer to DXF/DWG/PDF drawings for more details.



**Attention when locking the latch**

1. Close latches on both ends first.
  2. Close center latch next.
- ※ Closing the center latch first may create a non-watertight seal.

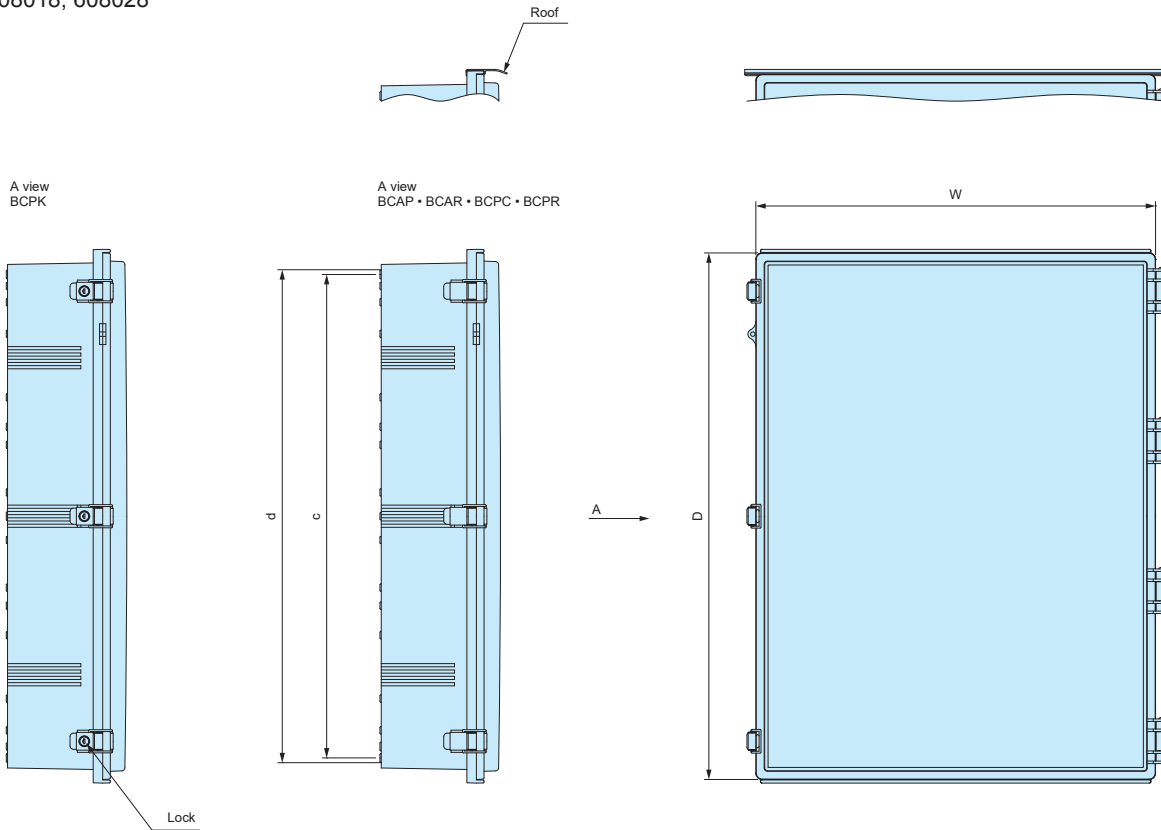
**Center latch must be closed last!**



Product no.	W	D	H	Available range			Bottom hole pitch	
				w	d	h	a	c
BCAP, BCPC • K 406018	400	600	181	358.6	565.9	163.8	352.5	552.5
BCAP, BCPC • K 406023	400	600	231	356.9	564.1	213.8	352	552.5
BCAP • R, BCPC • K • R506018	530	630	185	476.8	576.8	163.6	462	562
BCAP • R, BCPC • K • R506025	530	630	255	474.6	574.6	233.6	462	562
BCAP • R, BCPC • K • R507018	530	730	188	477	677	166.1	462	662
BCAP • R, BCPC • K • R507025	530	730	255	475	676.2	236	462	662



608018, 608028

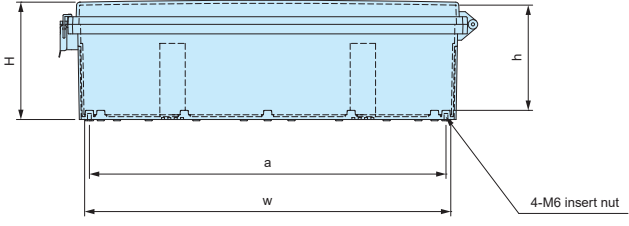


**Attention when locking the latch**

1. Close latches on both ends first.
2. Close center latch next.

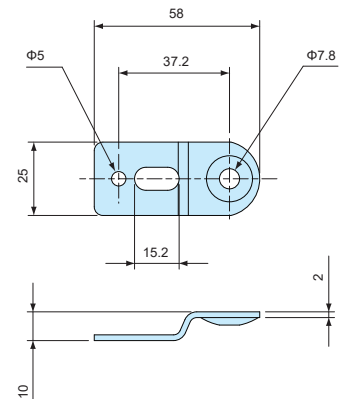
※ Closing the center latch first may create a non-watertight seal.

**Center latch must be closed last!**



Product no.	W	D	H	Available range			Bottom hole pitch	
				w	d	h	a	c
BCAP • R, BCPC • K • R608018	630	830	188	575	777	165.6	562	762
BCAP • R, BCPC • K • R608028	630	830	288	573.5	773.5	265.8	562	762

**Included stainless steel mounting brackets for 506018, 506025, 507018, 507025, 608018 and 608028**



Part name	Pcs	Material	Color / Finish
Mounting bracket	6	Stainless	Unfinished
Screw	6	Steel	Trivalent chromate

**BRF** SERIES

**OUTDOOR ROOF**



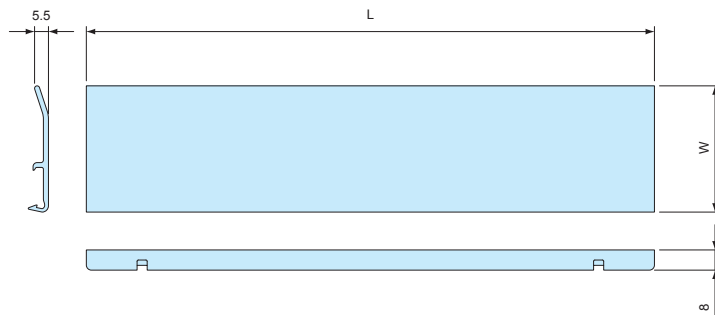
- Recommended to be used for outdoor environments for protection against rain etc.
- Snap-in easy installation.
- Available for BCAP and BCPC • BCPK series except 151509, 151512, 405016, 405020, 406018, and 406023 models.

**Color Type**

Color code	Material	Color / Finish	Suitable series
G	PVC	White gray / Unpainted	BCAP
S	PVC	Light gray / Painted	BCPC • BCPK

**BRF dimensions**

Roof for 091207 ~ 353518

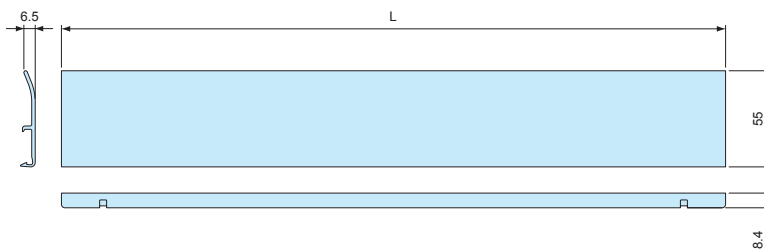


**Product no. / Dimensions**

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

Product no.	Suitable box	L	W
BRF- 90□	BCAP • BCPC • BCPK 091207 091208	105	45
BRF-100□	BCAP • BCPC • BCPK 101507 101508	115	45
BRF-110□	BCAP • BCPC • BCPK 112107 112110 112607 112610	125	45
BRF-135□	BCAP • BCPC • BCPK 131508 131808 131810	150	45
BRF-160□	BCAP • BCPC • BCPK 162110 162113 162610 162613	175	45
BRF-170□	BCAP • BCPC • BCPK 172211 172711	185	45
BRF-190□	BCAP • BCPC • BCPK 192810 192814	205	45
BRF-210□	BCAP • BCPC • BCPK 212110 212113	225	45
BRF-200□	BCAP • BCPC • BCPK 203013 203015 203018	225	50
BRF-250□	BCAP • BCPC • BCPK 253515 253518	275	50
BRF-280□	BCAP • BCPC • BCPK 282813 283813	305	50
BRF-300□	BCAP • BCPC • BCPK 303015 303018 304012 304015 304018	325	50
BRF-350□	BCAP • BCPC • BCPK 353515 353518	375	50

Roof for 354512 ~ 354520



**Product no. / Dimensions**

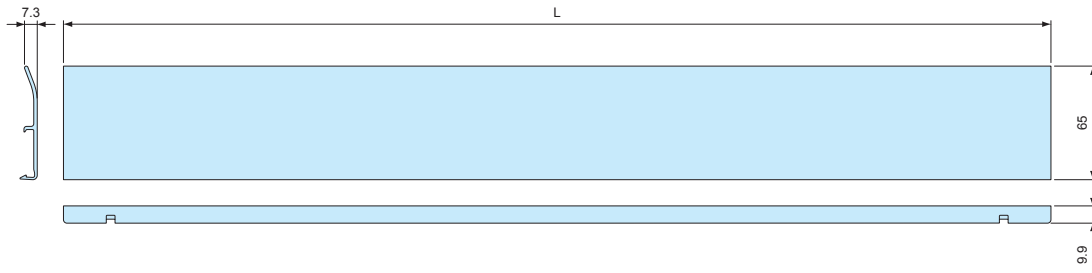
■ Please suffix color code at the end of the product number.

Product no.	Suitable box	L
BRF-350L□	BCAP • BCPC • BCPK 354512 354516 354520	380

■ S color type is light gray painted.

Roof for 506018 ~ 608028

Accessories (Optional parts)



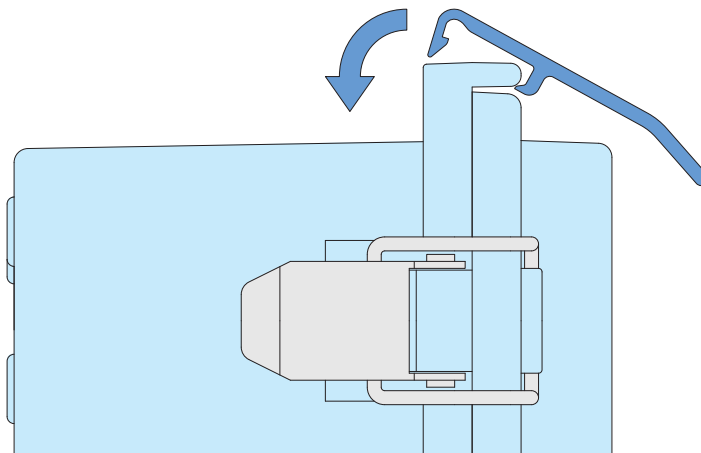
Product no. / Dimensions

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

Product no.	Suitable box	L
BRF-530□	BCAP • BCPC • BCPK 506018 506025 507018 507025	565
BRF-630□	BCAP • BCPC • BCPK 608018 608028	665

■ S color type is light gray painted.

- How to install BRF outdoor roof.  
Refer to illustration.



BCC-1

DUST PROTECTION CAP



- Prevent dust and other foreign material entry.
- Protection against corrosion on key hole part in environments such as coastal areas.
- When ordering, please ensure that the quantity required corresponds to the number of latches on your selected enclosure.

Product no. / Dimensions

Product no.	Material	Color	Sales unit
BCC-1	Silicone	Black	1 pc

Suitable Box

Suitable box	Required
BCPK192810 ~ 203018, 253515 ~ 405020	2 pcs
BCPK406018 ~ 608028	3 pcs

■ Not suitable for BCPK 212110, 212113, 172711, and smaller models.

**BMP-Z SERIES**

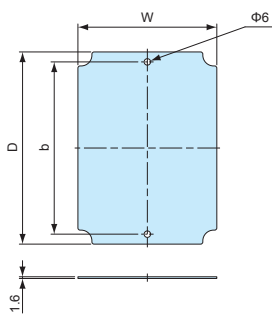
**STEEL MOUNTING PLATE**

- Tough but easily customizable.
- Large sized (BMP5060Z, 5070Z and 6080Z) plates have a 90° bent edge.

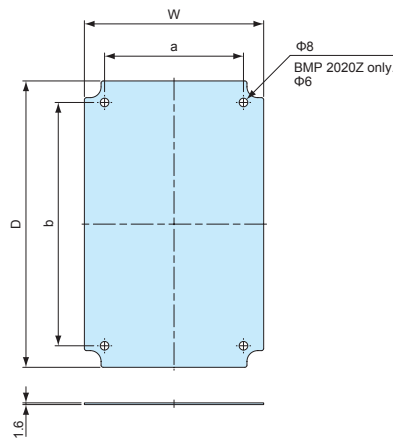
■ Customization services (machining, punch press or clinching nut insertion) are available. See website for more details.



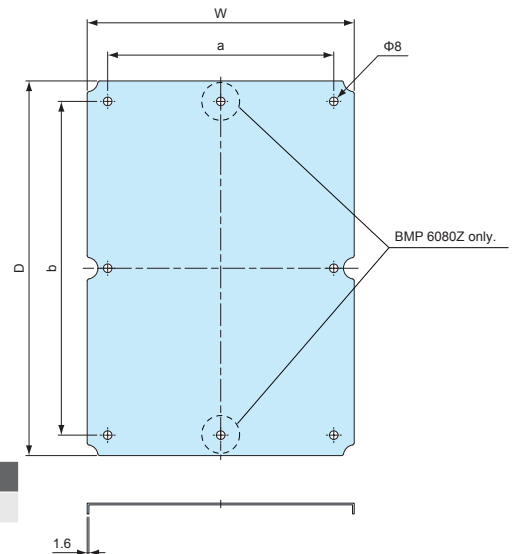
BMP0912Z ~ 1727Z



BMP1928Z ~ 4060Z



BMP5060Z ~ 6080Z



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

**Components**

Part name	Material	Finish
Mounting plate	Steel t=1.6	Zinc coated

**Product no. / Dimensions**

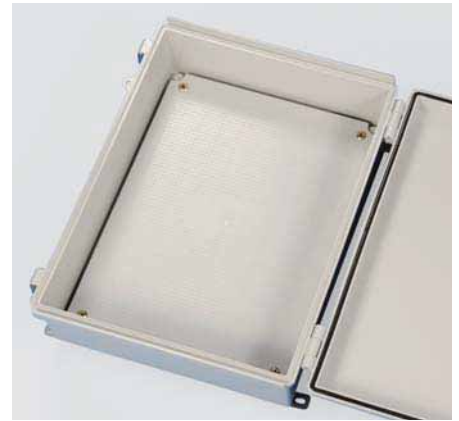
Product no.	W	D	a	b	Suitable box	Weight (g)
BMP0912Z	58	88	-	69	BCAP • R, BCPC • K • R 091207, 091208	53
BMP0813Z	68	118	-	99	BCAP • R, BCPC • K • R 101507, 101508	87
BMP1121Z	77	177	-	158	BCAP • R, BCPC • K • R 112107, 112110	159
BMP1126Z	77	227	-	208	BCAP • R, BCPC • K • R 112607, 112610	210
BMP1315Z	102	122	-	110	BCAP • R, BCPC • K • R 131508	141
BMP1217Z	102	152	-	140	BCAP • R, BCPC • K • R 131808, 131810	180
BMP1515Z	121	121	-	110	BCAP BCPC • K 151509, 151512	172
BMP1520Z	126	176	-	160	BCAP • R, BCPC • K • R 162110, 162113	262
BMP1525Z	127	227	-	210	BCAP • R, BCPC • K • R 162610, 162613	346
BMP1722Z	137	187	-	160	BCAP • R, BCPC • K • R 172211	308
BMP1727Z	137	237	-	210	BCAP • R, BCPC • K • R 172711	391
BMP1928Z	157	247	120	210	BCAP • R, BCPC • K • R 192810, 192814	462.5
BMP2020Z	176	176	120	150	BCAP • R, BCPC • K • R 212110, 212113	371
BMP2030Z	165	265	129	226	BCAP • R, BCPC • K • R 203013, 203015, 203018	519
BMP2535Z	215	315	180	270	BCAP • R, BCPC • K • R 253515, 253518	816
BMP2828Z	246	246	210	210	BCAP • R, BCPC • K • R 282813	727.5
BMP2838Z	246	346	210	310	BCAP • R, BCPC • K • R 283813	1,018
BMP3030Z	264	264	219	219	BCAP • R, BCPC • K • R 303015, 303018	826.5
BMP3040Z	265	365	228	325	BCAP • R, BCPC • K • R 304012, 304015, 304018	1,154
BMP3535Z	315	315	270	270	BCAP • R, BCPC • K • R 353515, 353518	1,196.5
BMP3545Z	301	401	274	365	BCAP • R, BCPC • K • R 354512, 354516, 354520	1,443
BMP4050Z	354	454	328	428	BCAP BCPC • K 405016, 405020	1,998
BMP4060Z	354	551	328	525	BCAP BCPC • K 406018, 406023	2,328
BMP5060Z	474	574	426	526	BCAP • R, BCPC • K • R 506018, 506025	3,286
BMP5070Z	472	672	426	626	BCAP • R, BCPC • K • R 507018, 507025	3,864
BMP6080Z	565	765	526	726	BCAP • R, BCPC • K • R 608018, 608028	5,288.5

■ K = BCPK series / R = BCAR • BCPR series

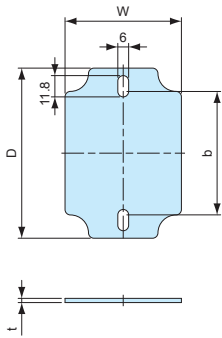
**BMP-P SERIES**

**PLASTIC MOUNTING PLATE**

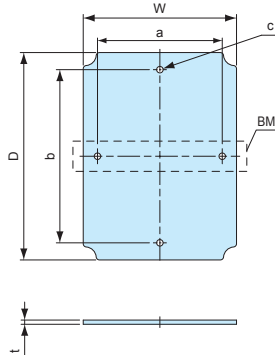
- Lightweight ABS plastic mounting plate.
- Flat plate: BMP0811P ~ BMP1515P  
Ribbed plate: BMP1520P ~ BMP4050P
- DXF/DWG/PDF drawings available on our website.



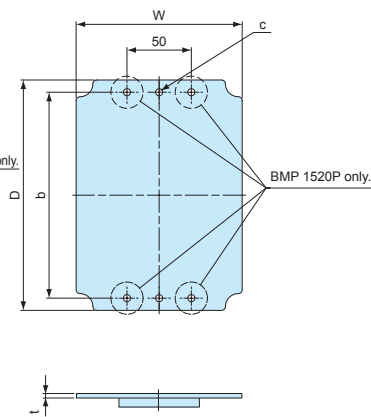
BMP0811P (Flat)



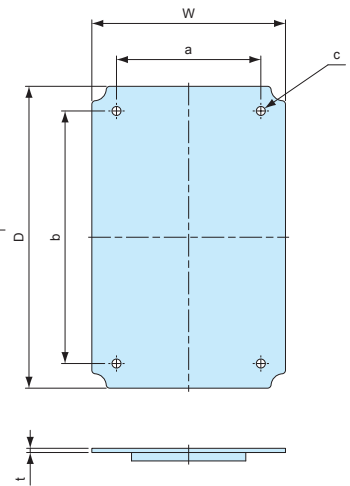
BMP0813P, 1515P (Flat)



BMP1520P, 1525P (Ribbed)



BMP1928P ~ 4050P (Ribbed)



**Components**

Part name	Material	Color
Mounting plate	ABS	White gray

**Product no. / Dimensions**

Product no.	W	D	a	b	t	c (Φ)	Suitable box	Weight (g)
BMP0811P	64.5	94.3	-	68.4	3.5	-	BCAP • R, BCPC • K • R 091207, 091208	21
BMP0813P	64.5	114.5	-	99	3	Φ6	BCAP • R, BCPC • K • R 101507, 101508	24
BMP1121P	76.5	176	-	158	3	Φ6	BCAP • R, BCPC • K • R 112107, 112110	40
BMP1126P	76.5	226	-	208	3	Φ6	BCAP • R, BCPC • K • R 112607, 112610	53
BMP1315P	101.5	121.5	-	110	3.5	Φ5.5	BCAP • R, BCPC • K • R 131508	36
BMP1217P	109.5	160	-	140	4	Φ6	BCAP • R, BCPC • K • R 131808, 131810	62
BMP1515P	123	123	110	110	3.5	Φ6	BCAP BCPC • K 151509, 151512	52
BMP1520P	129	179	-	160	3.5	Φ5.5	BCAP • R, BCPC • K • R 162110, 162113, 172211	92
BMP1525P	129	228.5	-	210	3.5	Φ6	BCAP • R, BCPC • K • R 162610, 162613, 172711	112
BMP1928P	158.5	248	120	210	3.5	Φ8	BCAP • R, BCPC • K • R 192810, 192814	162
BMP2020P	178.5	178.5	120	150	3.5	Φ5.5	BCAP • R, BCPC • K • R 212110, 212113	125
BMP2030P	166.5	266	128	225.5	4	Φ8	BCAP • R, BCPC • K • R 203013, 203015, 203018	188
BMP2535P	215.5	315	180	268.5	4	Φ8	BCAP • R, BCPC • K • R 253515, 253518	292
BMP2828P	248.5	248.5	210	210	4	Φ8	BCAP • R, BCPC • K • R 282813	237
BMP2838P	248	347.5	209	309.5	4	Φ8	BCAP • R, BCPC • K • R 283813	368
BMP3030P	262.5	262.5	219	219	4	Φ7.5	BCAP • R, BCPC • K • R 303015, 303018	281
BMP3040P	264.5	364	227	323	4	Φ8	BCAP • R, BCPC • K • R 304012, 304015, 304018	437
BMP3535P	313.5	313.5	269.5	269.5	4	Φ8	BCAP • R, BCPC • K • R 353515, 353518	424.5
BMP3545P	305	405.5	273	364	4	Φ8	BCAP • R, BCPC • K • R 354512, 354516, 354520	539
BMP4050P	357	457	328	428	4	Φ8.5	BCAP BCPC • K 405016, 405020	725.5

■ K = BCPK series / R = BCAR • BCPR series



TAKACHI ELECTRONICS ENCLOSURE CO., LTD.

3-21-16 Higashi-ryoke, Kawaguchi-shi, Saitama, 332-0003 JAPAN

Tel. +81-48-222-5409 / Fax. +81-48-222-7652

November 11, 2019

## Notice

### BMP-P series Plastic Mounting Plate Changes to Underside (bottom) Shape

#### ■ Affected models

Product Number	Status
BMP0811P	Pending (est. 2nd Quarter 2020)
BMP0818P	Pending (est. 2nd Quarter 2020)
BMP1126P	Pending (est. 3rd Quarter 2020)
BMP1212P	Pending (est. 2nd Quarter 2020)
BMP1217P	Changed

#### ■ Changes : Underside shape/construction

##### Current shape



##### New shape

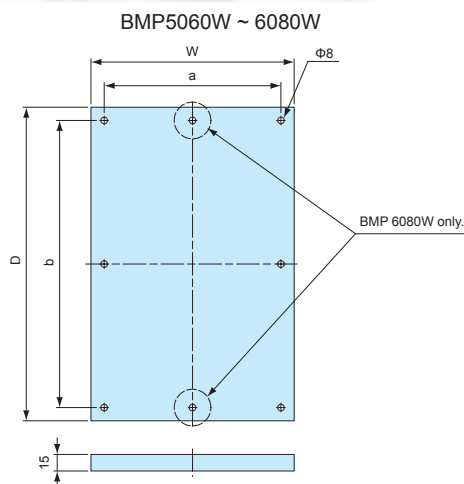
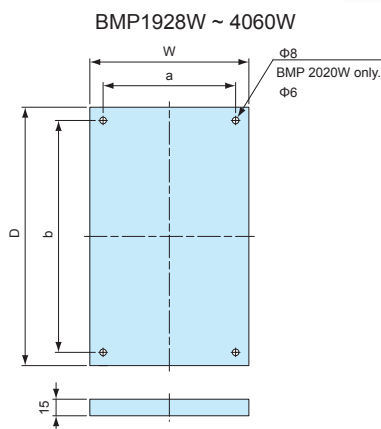
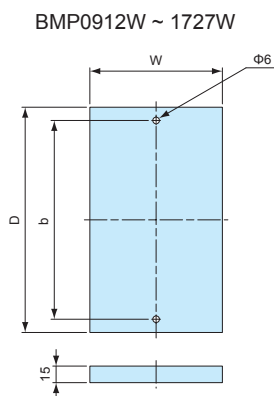


- Purpose : For the reinforcement and strengthening of small-sized plastic mounting plate(s).
- Effective date : Once present stock has run out.
- Note : There will be no changes to product number, color, or pricing.

**BMP-W SERIES**

**WOODEN MOUNTING PLATE**

- Easy installation with tapping screws.
- Easily customizable hard wooden plate.
- Plate comes with scales printed on for easy references.
- DXF/DWG/PDF drawings available on our website.



**Components**

Part name	Pcs	Material	Color / Finish
Mounting plate	1	Wood board t=15	Scaled sheet
Screw	2 ~ 8	Steel	Trivalent chromate

**Product no. / Dimensions**

Product no.	W	D	a	b	Suitable box	Screw	Weight (g)
BMP0912W	58	92	-	69	BCAP • R, BCPC • K • R 091207, 091208	M4-20 × 2 pcs	62
BMP0813W	68	122	-	99	BCAP • R, BCPC • K • R 101507, 101508	M4-20 × 2 pcs	94
BMP1121W	77	181	-	158	BCAP • R, BCPC • K • R 112107, 112110	M4-20 × 2 pcs	166
BMP1126W	77	231	-	208	BCAP • R, BCPC • K • R 112607, 112610	M4-20 × 2 pcs	191
BMP1315W	102	126	-	110	BCAP • R, BCPC • K • R 131508	M4-20 × 2 pcs	127
BMP1217W	102	156	-	140	BCAP • R, BCPC • K • R 131808, 131810	M4-20 × 2 pcs	190
BMP1515W	118	125	-	110	BCAP BCPC • K 151509, 151512	M4-20 × 2 pcs	172
BMP1520W	126	180	-	160	BCAP • R, BCPC • K • R 162110, 162113	M4-20 × 2 pcs	243
BMP1525W	127	231	-	210	BCAP • R, BCPC • K • R 162610, 162613	M4-20 × 2 pcs	352
BMP1722W	137	191	-	160	BCAP • R, BCPC • K • R 172211	M4-20 × 2 pcs	286
BMP1727W	137	241	-	210	BCAP • R, BCPC • K • R 172711	M4-20 × 2 pcs	212
BMP1928W	150	240	120	210	BCAP • R, BCPC • K • R 192810, 192814	M5-20 × 4 pcs	350
BMP2020W	170	174	120	150	BCAP • R, BCPC • K • R 212110, 212113	M4-20 × 4 pcs	336
BMP2030W	159	256	129	226	BCAP • R, BCPC • K • R 203013, 203015, 203018	M5-20 × 4 pcs	482
BMP2535W	210	300	180	270	BCAP • R, BCPC • K • R 253515, 253518	M5-20 × 4 pcs	688
BMP2828W	240	240	210	210	BCAP • R, BCPC • K • R 282813	M5-20 × 4 pcs	565
BMP2838W	240	340	210	310	BCAP • R, BCPC • K • R 283813	M5-20 × 4 pcs	893
BMP3030W	249	249	219	219	BCAP • R, BCPC • K • R 303015, 303018	M5-20 × 4 pcs	659
BMP3040W	258	355	228	324	BCAP • R, BCPC • K • R 304012, 304015, 304018	M5-20 × 4 pcs	965
BMP3535W	300	300	270	270	BCAP • R, BCPC • K • R 353515, 353518	M5-20 × 4 pcs	964
BMP3545W	301	395	274	365	BCAP • R, BCPC • K • R 354512, 354516, 354520	M5-20 × 4 pcs	1,314
BMP4050W	355	455	328	428	BCAP BCPC • K 405016, 405020	M5-20 × 4 pcs	1,754
BMP4060W	355	552	328	525	BCAP BCPC • K 406018, 406023	M5-20 × 4 pcs	2,015.5
BMP5060W	456	556	426	526	BCAP • R, BCPC • K • R 506018, 506025	M5-20 × 6 pcs	2,650
BMP5070W	456	656	426	626	BCAP • R, BCPC • K • R 507018, 507025	M5-20 × 6 pcs	3,152.5
BMP6080W	556	756	526	726	BCAP • R, BCPC • K • R 608018, 608028	M5 / M6-20 × 8 pcs	4,434

■ K = BCPK series / R = BCAR • BCPR series

**BFL SERIES**

**PLASTIC MOUNTING BRACKET**



Color G      Color S

- 2 different colored type to match box colors.
- Tough and strong glass fiber filled polycarbonate.

**Color Type**

Color	Color Name	Applicable Models
G	White gray	BCAP • BCAR
S	Light gray	BCPC • BCPK • BCPR

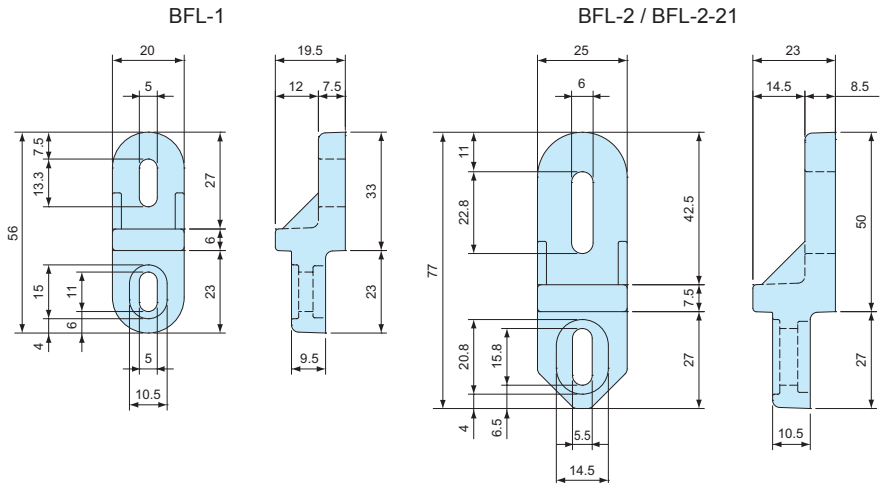
**Components**

Part name	Pcs	Material / Finish
Mounting bracket	4	Glass fiber filled polycarbonate
Screw	4	Stainless steel / Unfinished

**Product no. / Dimensions**

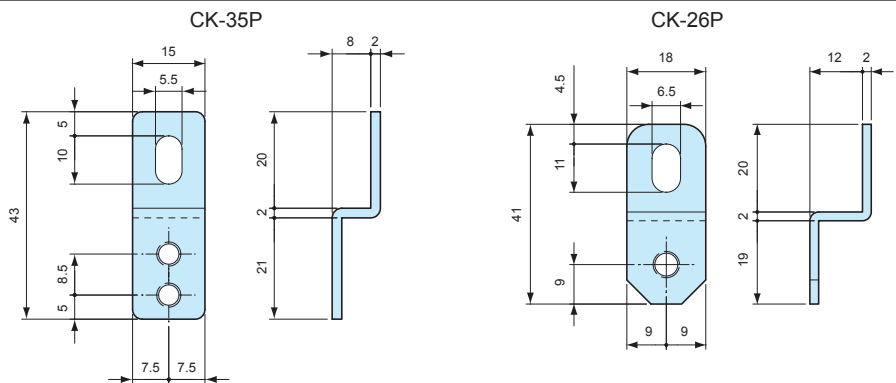
Product no.	Suitable box	Screw
BFL-1□	BCAP • R, BCPC • K • R 0912, 1015, 1121, 1126, 1315, 1318, 1621, 1626, 1722, 1727, 212113	M4-12
BFL-2□	BCAP • R, BCPC • K • R 1928, 2030, 2535, 2828, 2838, 3030, 3040, 3535, 3545, 4050, 4060, 5060	M5-12
BFL-2-21□	BCAP • R, BCPC • K • R 212110	M4-12

- Please suffix color code at the end of the product number.
- ※Not suitable for BCAP1515 model. Use CK-35P (Stainless steel) instead.



**CK SERIES**

**STAINLESS STEEL MOUNTING BRACKET**



**Components**

Part name	Pcs	Material	Finish
Mounting bracket	4	Stainless steel	Barrel finish
Screw	4	Stainless steel	Unfinished

**Product no. / Dimensions**

Product no.	Suitable box	Screw
CK-35P	BCAP • R, BCPC • K • R 0912, 1015, 1121, 1126, 1315, 1318, 1515, 1621, 1626, 1722, 1727, 2121	M4-10
CK-26P	BCAP • R, BCPC • K • R 1928, 2030, 2535, 2828, 2838, 3030, 3040, 3535, 3545, 4050, 4060	M5-10

**MT SERIES**

**PCB MOUNTING SCREW**

- PCB mounting screws for inner bosses of BCAP • BCAR • BCPC • BCPK • BCPR series.

**Product no. / Dimensions**

Product no.	Material	Finish	Pack of
MT4-8T	Steel M4	Trivalent chromate	20
MT5-8T	Steel M5	Trivalent chromate	20



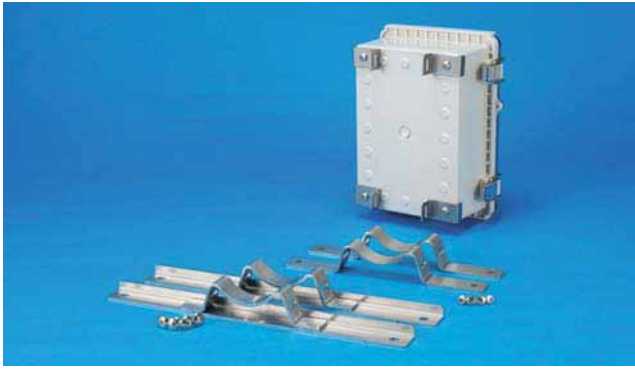
**Suitable Box**

Product no.	Suitable box	Weight / Torque
MT4-8T	BCAP • R, BCPC • K • R 0912, 1015, 1121, 1126, 1315, 1318, 1515, 1621, 1626, 1722, 1727, 1928, 2121	7kgf • cm (0.7N • m)
MT5-8T	BCAP • R, BCPC • K • R 2030, 2535, 2828, 2838, 3030, 3040, 3535, 3545, 4050, 4060, 5060, 5070, 6080	14kgf • cm (1.4N • m)



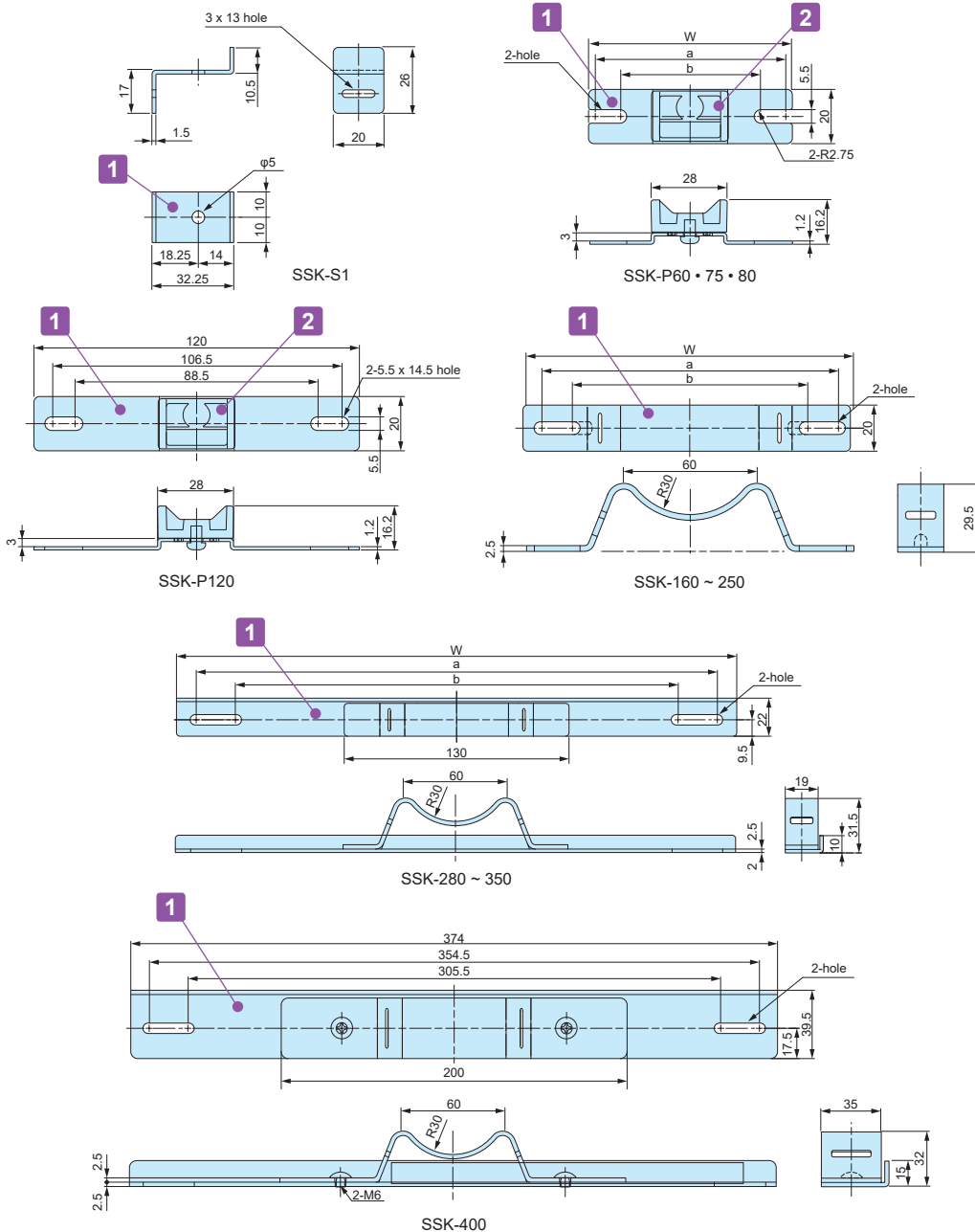
SSK SERIES

POLE MOUNTING BRACKET



- Stainless steel pole mounting bracket for BCAP • BCAR and BCPC • BCPK • BCPR series.
- No hole milling is required for maintaining the IP rating of the enclosure.
- Use PKB mounting belt to install onto a pole (See page 258 for PKB series).
- DXF/DWG/PDF drawings available on our website.

SSK dimensions



APPLICATION EXAMPLE

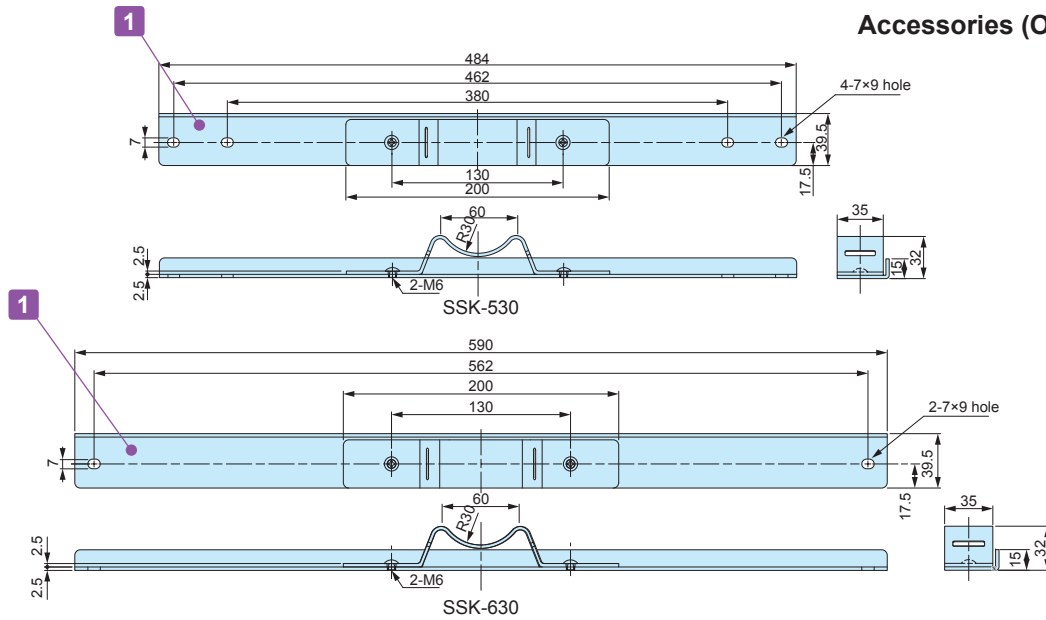


**WEATHER STATION DATA LOGGER**  
Product by Sakaki Corporation (Japan)



**WATER LEVEL DETECTOR**  
Product by Aspect System (Japan)

Accessories (Optional parts)



Components

No.	Part name	Pcs	Material	Color / Finish
1	Bracket	2 / 4	Stainless Steel SUS304	Barrel finish
2	Plastic bracket (SSK-P type only)	2	ASA UL94HB	White gray (RAL7035)
-	Screw	4	Stainless Steel SUS304	Unfinished

Product no. / Dimensions

Product no.	W	a	b	c	Box size	Belt to use with	Pack of
SSK-S1	32.25	18.25	14	-	0912, 1015, 1121, 1126, 1315, 1318, 1621, 1626, 1722, 1727, 2121	PKB-10P, PKB-10S	4
SSK-P60	60	54.5	46.5	5.5x9	0912	PKB-10P, PKB-10S	2
SSK-P75	75	69.5	53.5	5.5x12.5	1015	PKB-10P, PKB-10S	2
SSK-P80	80	74.5	64.5	5.5x10.5	1121, 1126	PKB-10P, PKB-10S	2
SSK-P120	120	106.5	88.5	5.5x14.5	1315, 1318	PKB-10P, PKB-10S	2
SSK-160	142	129.5	101	-	1515, 1621, 1626	PKB-10P, PKB-10S	2
SSK-170	152	142.3	101	-	1722, 1727	PKB-10P, PKB-10S	2
SSK-200	174	161.5	112.5	-	1928, 2030	PKB-10P, PKB-10S	2
SSK-210	192	180.5	131.5	-	2121	PKB-10P, PKB-10S	2
SSK-250	230	215.5	166.5	-	2535	PKB-10P, PKB-10S	2
SSK-280	260	244.5	195.5	-	2828, 2838	PKB-10P, PKB-10S	2
SSK-300	280	264.5	215.5	-	3030, 3040	PKB-10P, PKB-10S	2
SSK-350	324	302.5	253.5	-	3535, 3545	PKB-10P, PKB-10S	2
SSK-400	374	354.5	305.5	-	4050, 4060	PKB-20S	2
SSK-530	484	462	380	7x9	5060, 5070	PKB-20S	2
SSK-630	590	562	-	7x9	6080	PKB-20S	2

PKB SERIES

POLE MOUNTING BELT



PKB-10PM, 10P

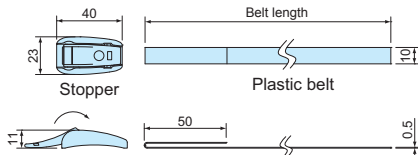


PKB-10S, 20S

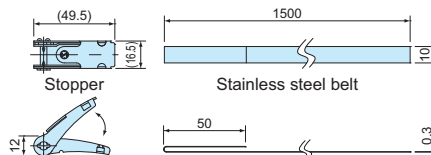
- New shorter belt type PKB-10PM is available for Φ25 to Φ60mm poles. Other belt types are for Φ60 to Φ400mm poles.
- Designed for one time use only (not reusable).
- Strong stainless steel clamping type and easy installation plastic type are available.
- Use SSK mounting bracket for installation onto a pole.

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

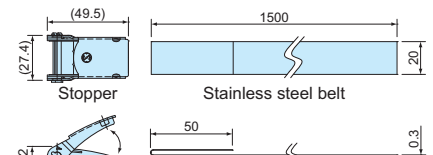
PKB-10PM, 10P



PKB-10S



PKB-20S



Components

Part name	Pcs	Material	Color / Finish
Stopper	2	POM • Stainless steel SUS304	Black • Barrel finish
Belt	2	PET • Stainless steel SUS430	Gray • Bright annealed finish

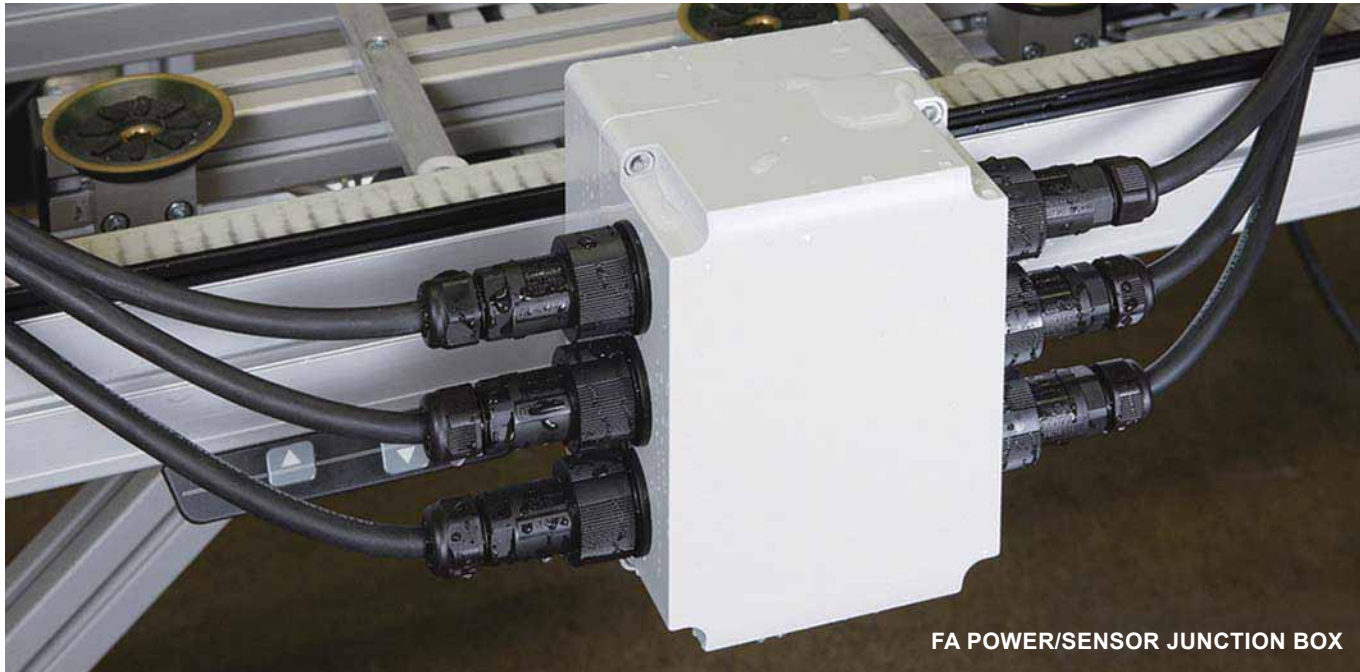
Product no. / Dimensions

Product no.	W	D	H	a	b	Belt material	Belt length	Tensile strength (horizontal)	Weight (g)	Pack of
NEW PKB-10PM	24	23	11	10	0.5	PET	500mm	0.8kN	14	2
PKB-10P	23	40	11	10	0.5	PET	1,500mm	1.3kN	31.8	2
PKB-10S	(16.5)	(49.5)	12	10	0.3	Stainless steel	1,500mm	1.4kN	101.6	2
PKB-20S	(27.4)	(49.5)	12	20	0.3	Stainless steel	1,500mm	2.9kN	182.2	2

**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**

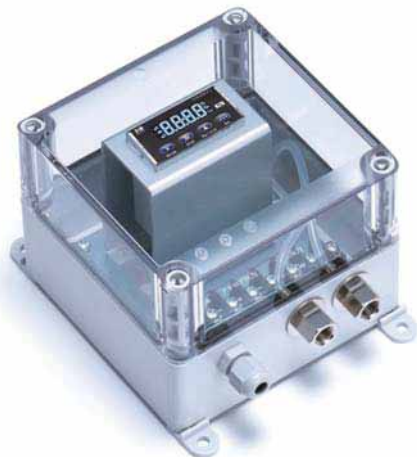


**AUTOMATIC DOOR OPEN/CLOSE SWITCH**



**DIGITAL DIFFERENTIAL MANOMETER**

Product by KRONE CORPORATION (Japan)



**PARTS FEEDER COUNTER**



## REMOTE GREENHOUSE MONITORING SYSTEM

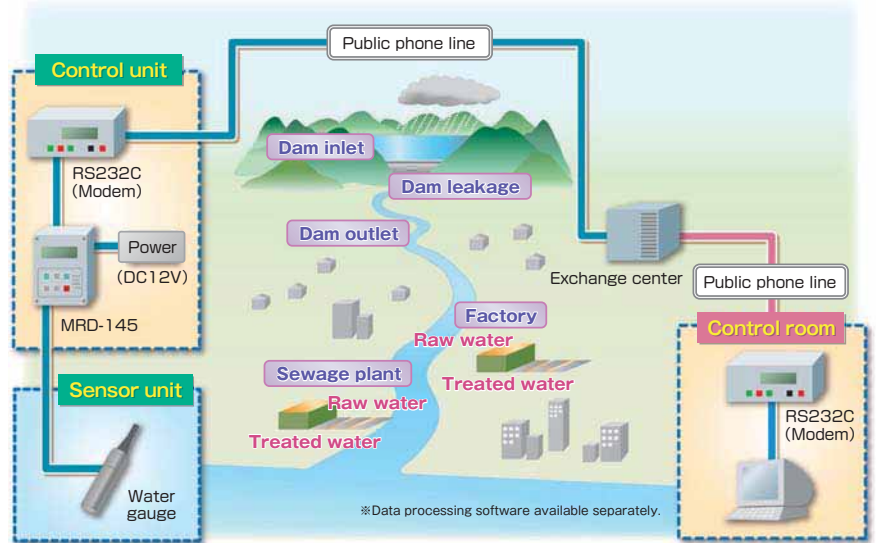


## METEOROLOGICAL MONITOR



## 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)



# SPCP SERIES

# IP67 POLYCARBONATE BOX



### Technical Data

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



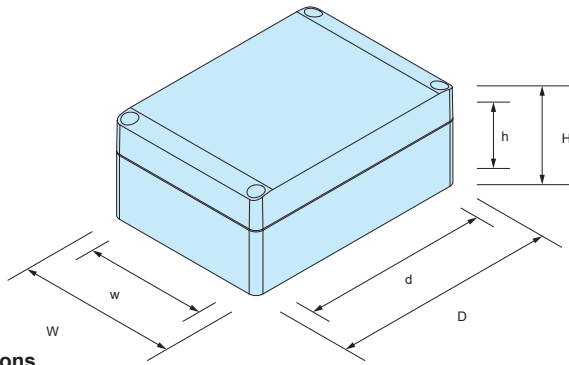
- Tough polycarbonate material for superior impact resistance.
- Available in 28 different sizes, with 2 different cover types (white gray and transparent).
- Suitable to be used as terminal junction box, control box, communication unit and so on.
- Mountable on walls by using the cover holes for fastening.

### 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

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



Product no. / Dimensions

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

# SPCM SERIES

# IP67 POLYCARBONATE BOX with METRIC KNOCK-OUTS

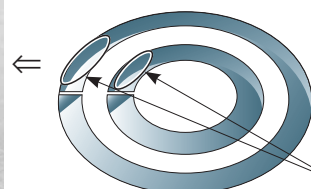


### Technical Data

Protection class: IP67  
 Operating temperature: -20°C ~ +75°C  
 Recommended torque: 1N · m ~ 1.5N · m



- Tough polycarbonate material for superior impact resistance.
- Available in 21 different sizes, with 2 different cover types (white gray and transparent).
- Molded with metric knock-outs for easy removal for cable entry.
- Suitable to be used as terminal junction box, control box, communication unit and so on.
- Mountable on walls by using the cover holes for fastening.



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

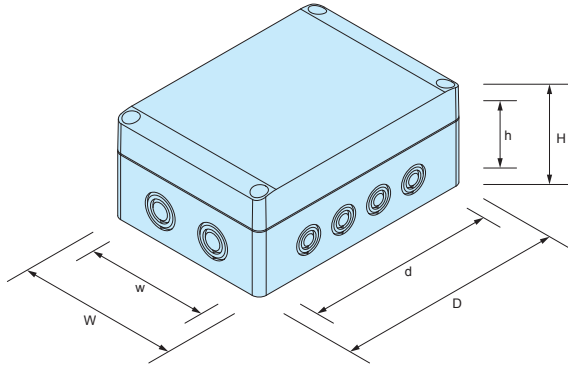
"A" point

### Components

No.	Part name	Pcs	Material	Color / Finish
1	Cover	1	Polycarbonate UL94V-2	White gray • 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

SPCM dimensions

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



※Metric knock-outs are on all 4 sides.

Product no. / Dimensions

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							
SPCM081306G			SPCM081306T	75	125	60	65.5	91	45.5	159
SPCM081308G			SPCM081308T	75	125	75	65.5	91	60.5	208
SPCM081310G			SPCM081310T	75	125	100	65	90.5	85.5	275
SPCM081313G			SPCM081313T	75	125	125	64.5	90	110.5	299
SPCM101006G			SPCM101006T	100	100	60	90.5	66	45.5	164
SPCM131306G			SPCM131306T	125	125	60	115.5	91	45.5	243
SPCM131308G			SPCM131308T	125	125	75	115.5	91	60.5	292
SPCM131310G			SPCM131310T	125	125	100	115	90.5	85.5	366
SPCM131313G			SPCM131313T	125	125	125	114.5	90	110.5	401
SPCM131806G			SPCM131806T	125	175	60	115.5	141	45.5	294
SPCM131808G			SPCM131808T	125	175	75	115.5	141	60.5	373
SPCM131810G			SPCM131810T	125	175	100	115	140.5	85.5	450
SPCM131813G			SPCM131813T	125	175	125	115	140.5	110.5	519
SPCM131815G			SPCM131815T	125	175	150	114	139.5	135.5	588
SPCM181808G			SPCM181808T	175	175	75	165.5	141	60.5	468
SPCM181810G			SPCM181810T	175	175	100	165	140.5	85.5	569
SPCM181813G			SPCM181813T	175	175	125	164.5	140	110.5	639
SPCM181815G			SPCM181815T	175	175	150	164	139.5	135.5	723
SPCM182508G			SPCM182508T	175	250	75	165.5	216	60.5	633
SPCM182510G			SPCM182510T	175	250	100	165	215.5	85.5	745
SPCM182515G			SPCM182515T	175	250	150	164	214.5	135.5	946

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



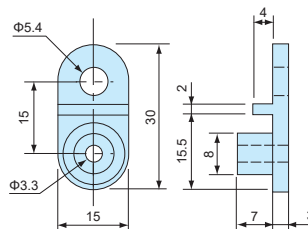
Pole mounting bracket & belt SSK, PKB series  
See page SSK-1 ~ SSK-4



Outdoor roof SR series  
See page SPCM • SPCP-ACC-2



**SFL-1 PLASTIC MOUNTING BRACKET**



Product no. / Feature

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

**SMS4-8 MOUNTING SCREW**



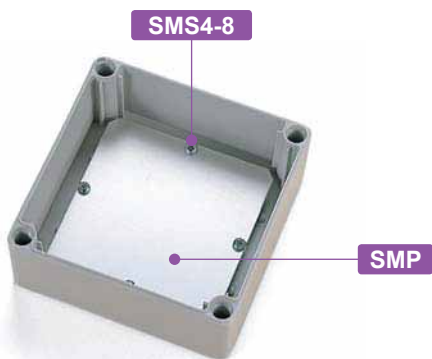
- Mounting screws for PCB mounting on SPCP • SPCM series.  
※1 set included with each SPCP • SPCM enclosure.

Product no. / Feature

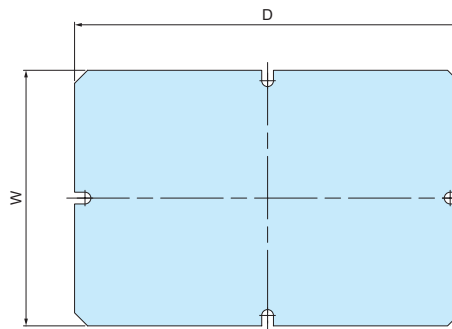
Product no.	Material	Screw	Pcs
SMS4-8 (M4-8 Pan head tapping)	Steel	Trivalent chromate	4

**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

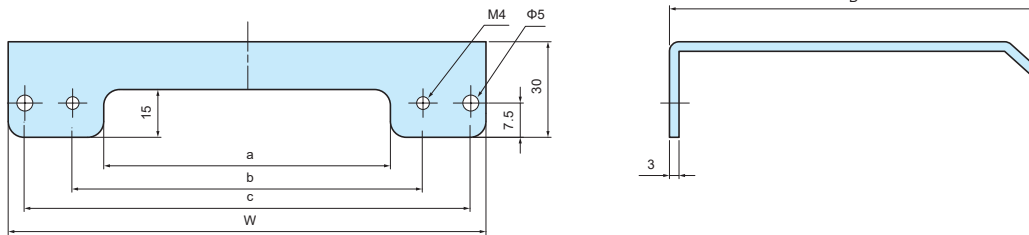
- Customization services (clinchng standoffs, hole milling, and others) available.  
See website for more details.



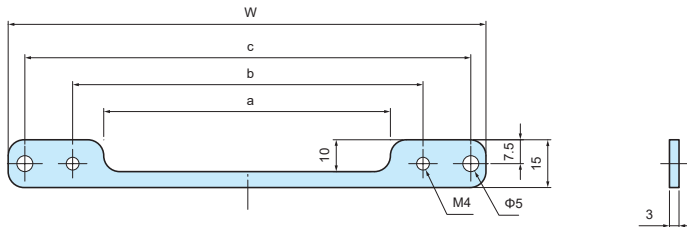


- Roof and spacer attachments are easily attached onto the enclosure using existing cover fastening holes.
- Recommended for outdoor environments for protection against rain, etc.

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

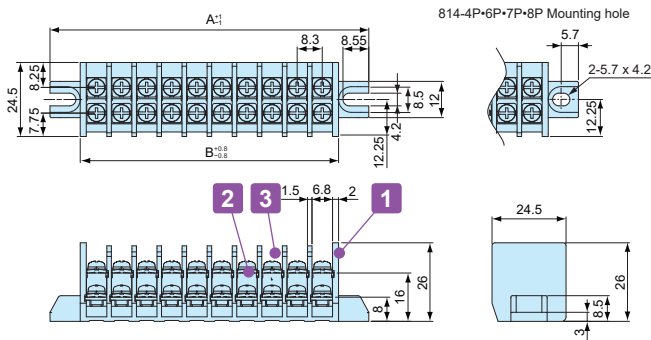


■ Terminal block for SPCM • SPCP series.

### 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

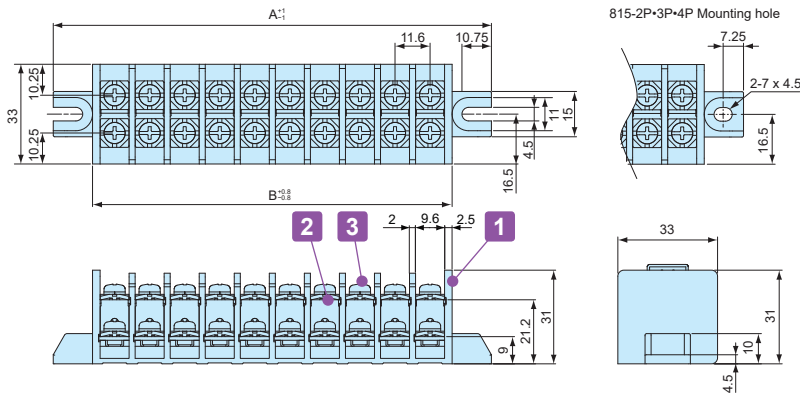
### STB-814



### 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

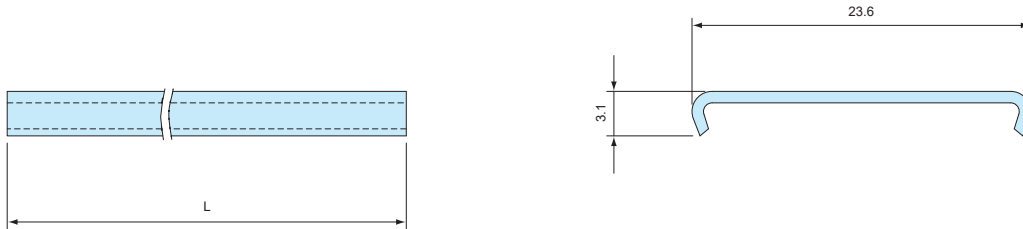
# STC SERIES

# TERMINAL COVER

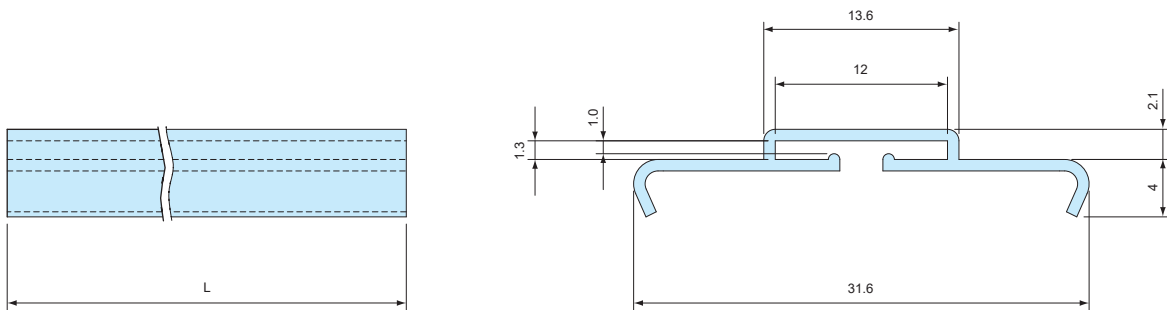


- Terminal cover for STB terminal block.
- Use for protecting terminals.

## STC814



## STC815



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

### Product no. / Dimensions

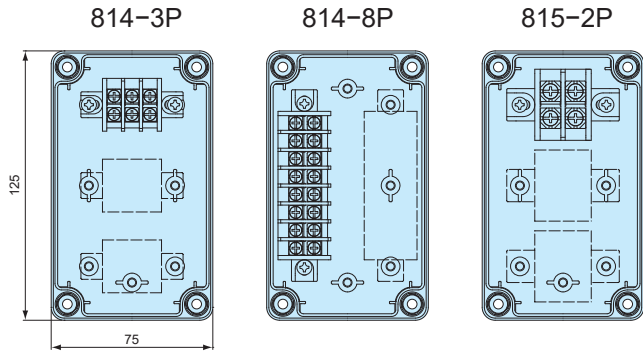
Product no.	P (Number of poles)	L	Compatible terminal
STC814- 3P	3	22.4	STB814- 3P
STC814- 4P	4	30.7	STB814- 4P
STC814- 6P	6	47.3	STB814- 6P
STC814- 7P	7	55.6	STB814- 7P
STC814- 8P	8	63.9	STB814- 8P
STC814- 9P	9	72.2	STB814- 9P
STC814-10P	10	80.5	STB814-10P
STC815- 2P	2	20.2	STB815- 2P
STC815- 3P	3	31.8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

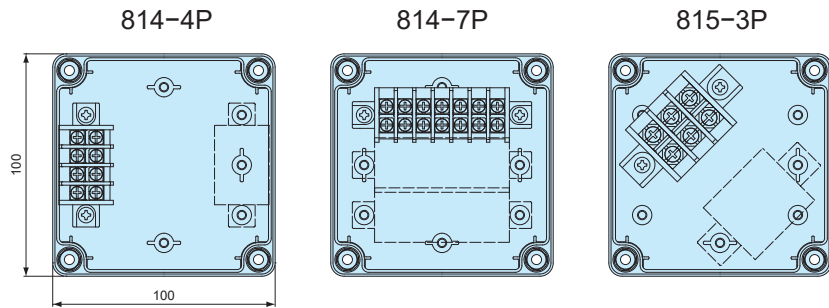
■ Drawings below are reference examples only.  
DXF/DWG/PDF drawings available on our website.

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

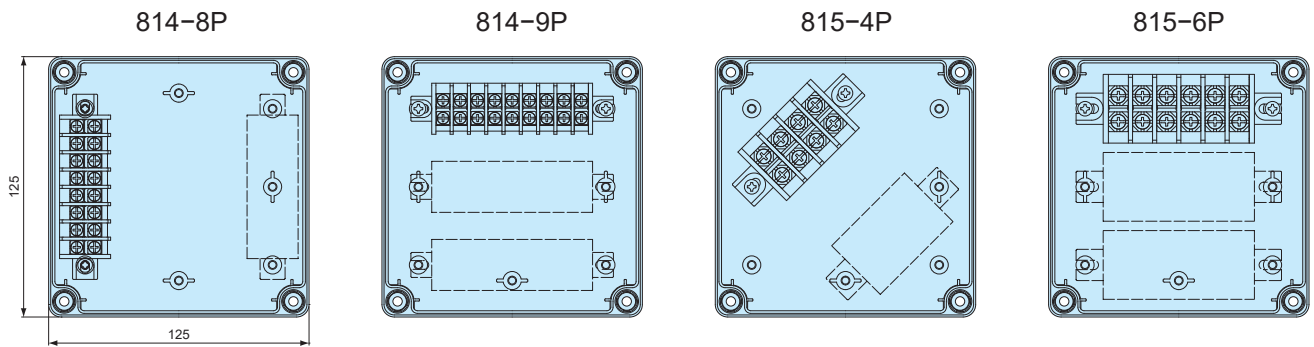
Suitable box SPCM/SPCP 081305 • 081306 • 081308 • 081310 • 081313



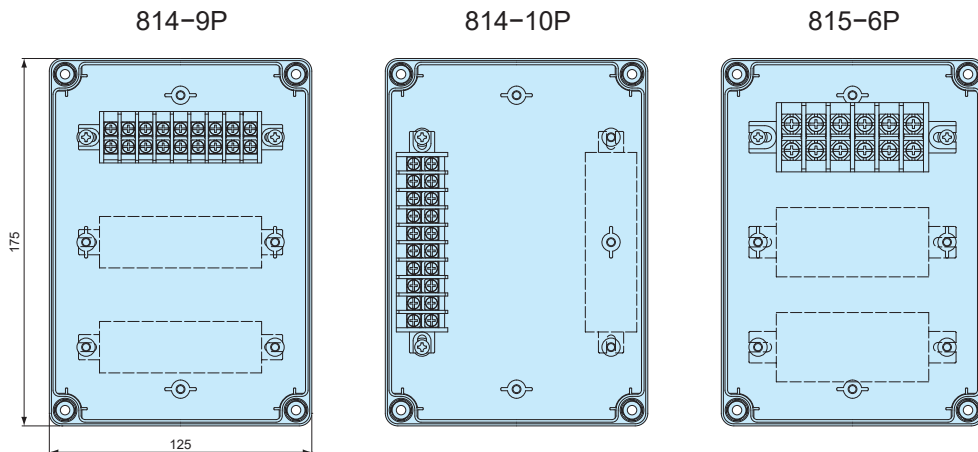
Suitable box SPCM/SPCP 101006



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



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



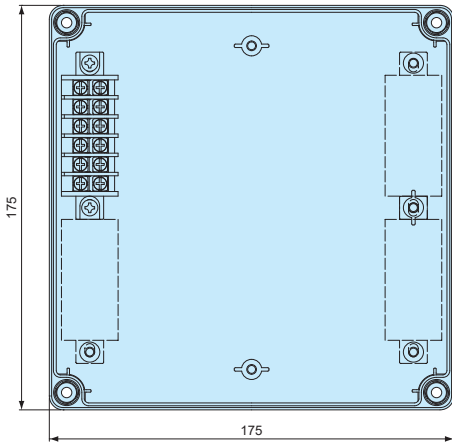
# STB TERMINAL BLOCK MOUNTING POSITION

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

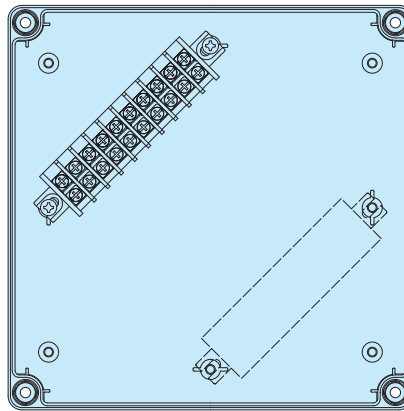
■ Terminals can be installed in the area with dotted lines.

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

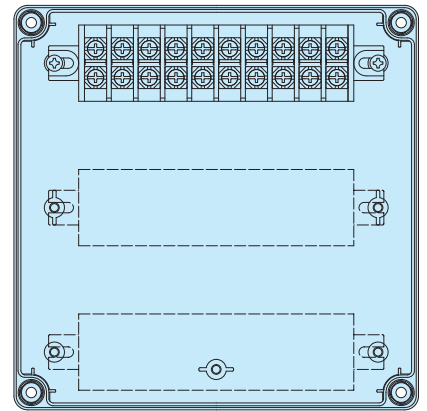
814-6P



814-10P

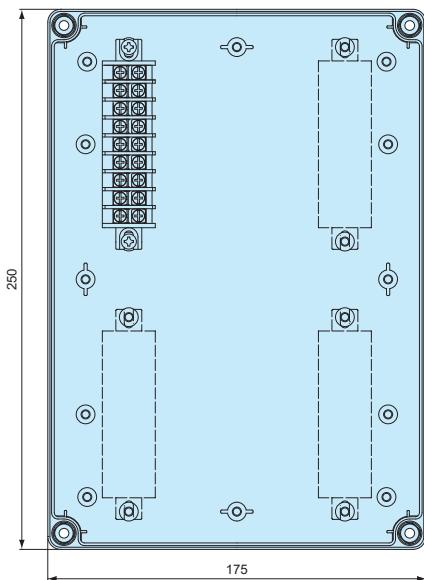


815-10P

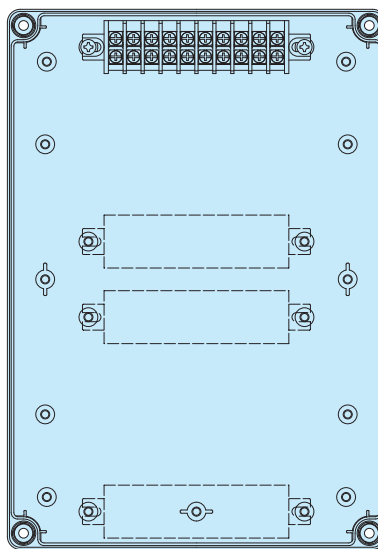


Suitable box SPCM/SPCP 182508 • 182510 • 182515

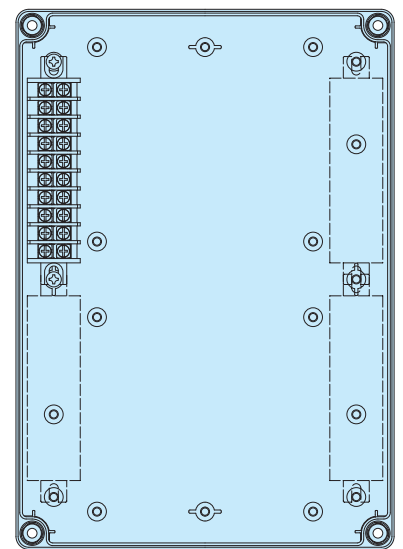
814-9P



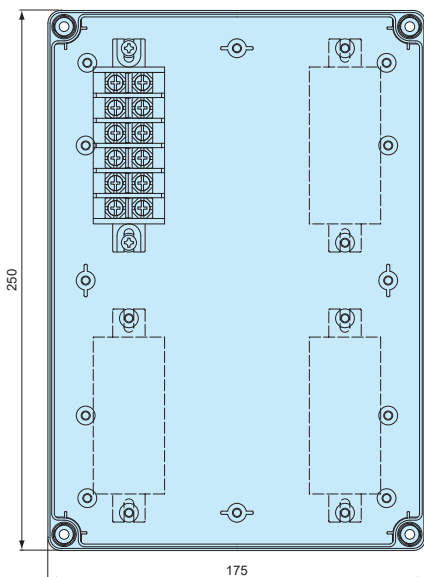
814-10P



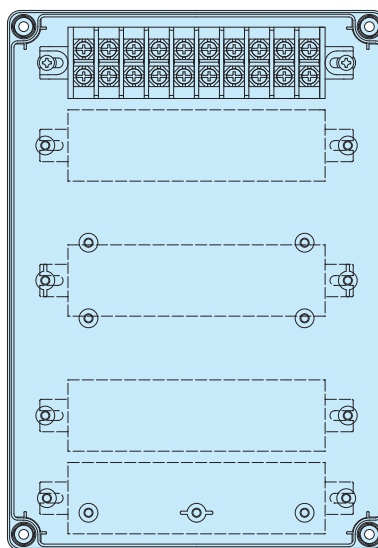
814-10P



815-6P

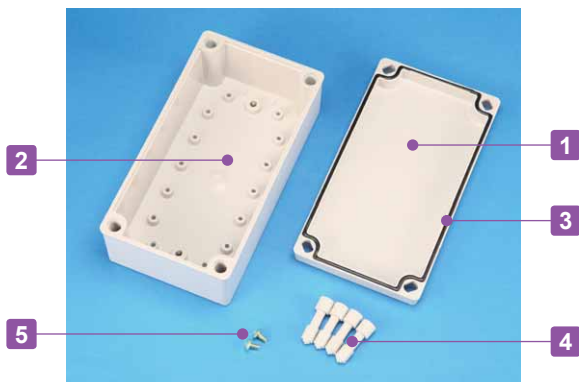


815-10P



# BCAS SERIES

# IP65 PLASTIC PULL BOX



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

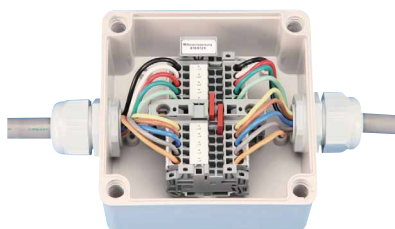
No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS UL94HB	White gray
2	Body	1	ABS UL94HB	White gray
3	Gasket	1	Polyurethane	Black
4	Cover screw	4	Nylon · Stainless steel (BCAS050604G and BCAS050605G only)	White gray · Unfinished
5	Tapping screw (for mounting plate)	2 ~ 4	Steel	Trivalent chromate

## APPLICATION EXAMPLE

### SWITCH BOX



### TERMINAL JUNCTION BOX



### AIR PIPE CONTROLLER



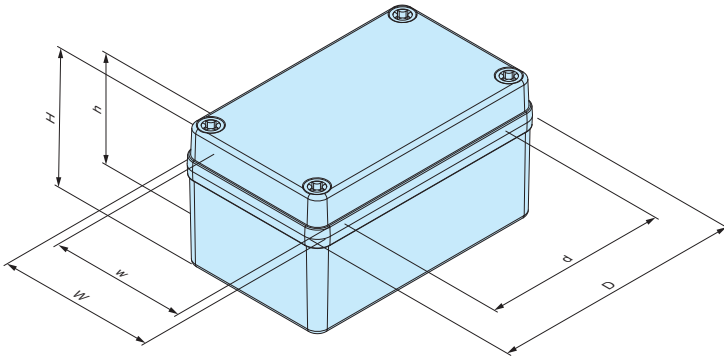
### METEOROLOGICAL MONITOR TRANSMITTER



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**

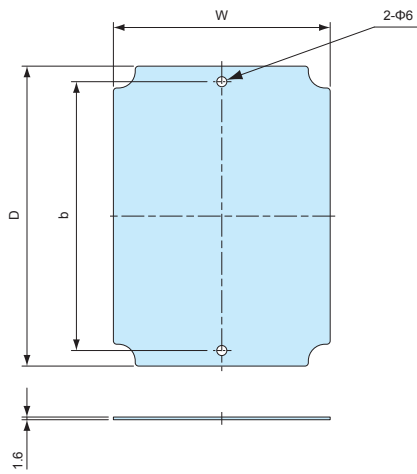
**STEEL MOUNTING PLATE**



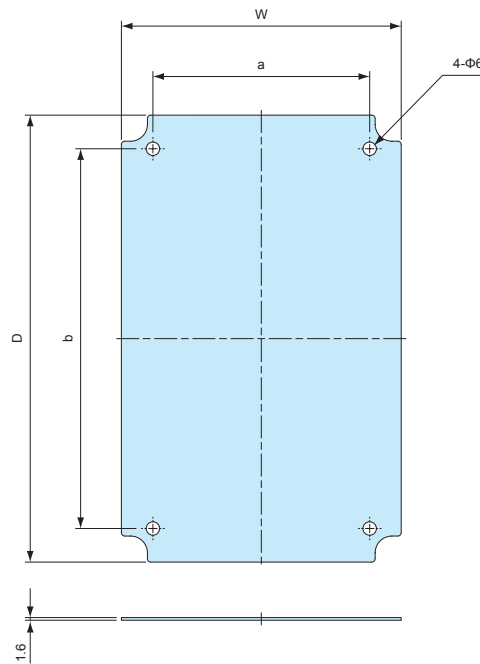
■ Strong but easily customizable.

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

BMP0506Z ~ 1525Z



BMP2020Z, 2123Z



**Components**

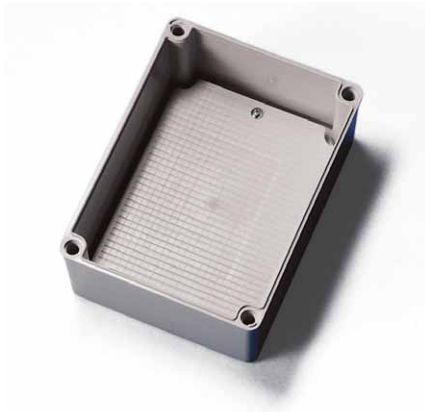
Part name	Material	Color / Finish
Mounting plate	Steel t=1.6	Zinc coated

**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**

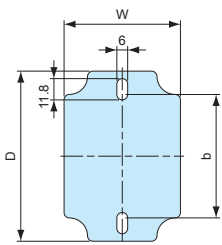
**PLASTIC MOUNTING PLATE**



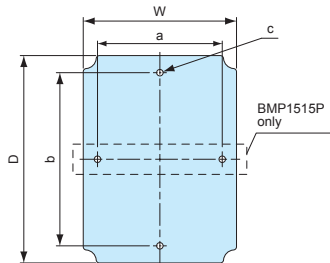
- Lightweight ABS plastic mounting plate.
- Not available for BCAS050604, 050605, 060905, 071005, 080806, 101807, 102307, and 212310 models.

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

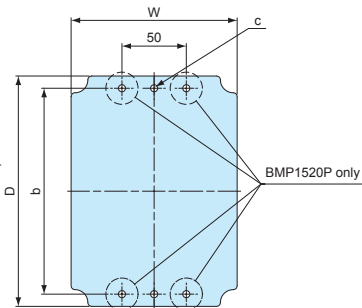
BMP0811P



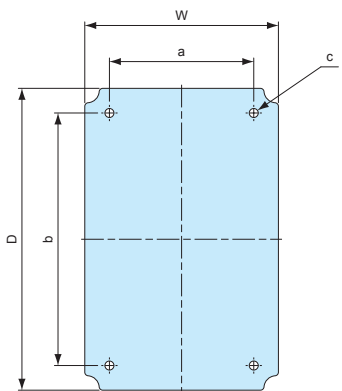
BMP0813P ~ 1616P



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

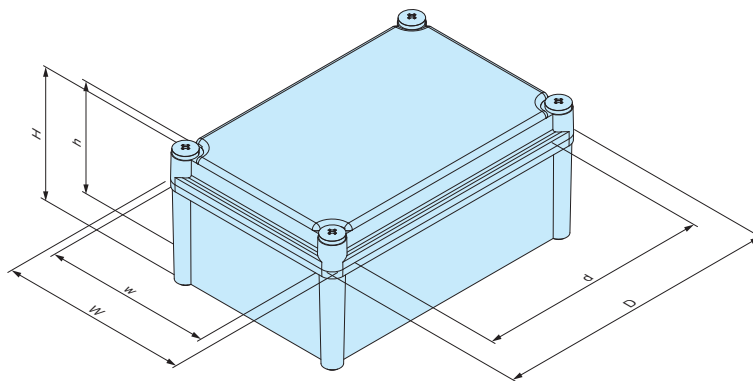


### Components

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.				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)

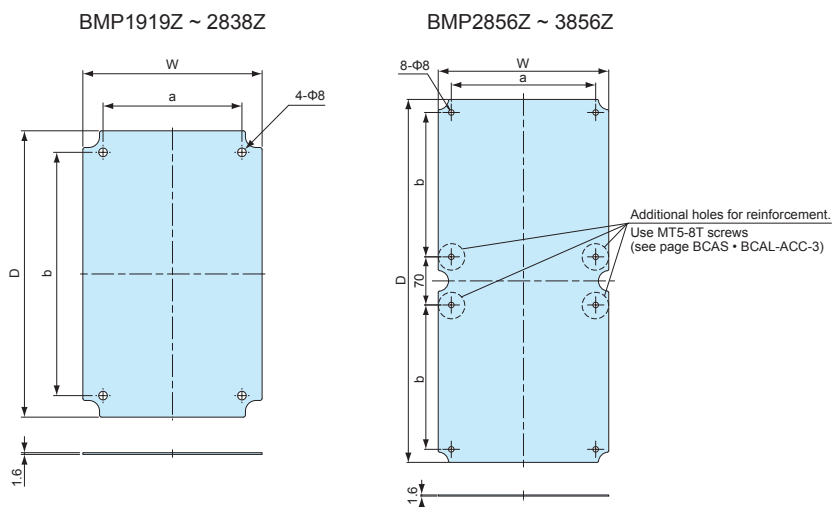


**BMP-Z SERIES**

**STEEL MOUNTING PLATE**



DXF/DWG/PDF drawings available on our website.



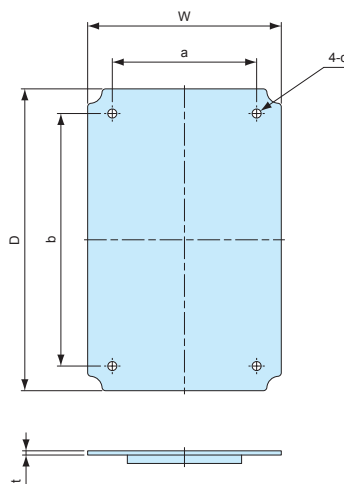
- Strong but easily customizable.
- Material/Finish : Steel t=1.6mm / Zinc coated

**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

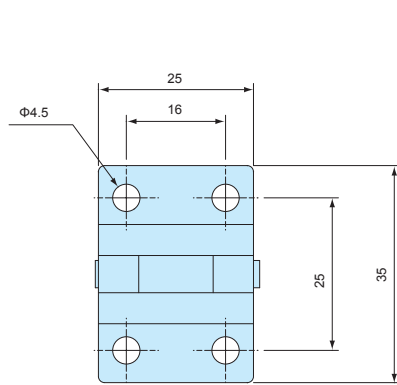
**Product no. / Dimensions**

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

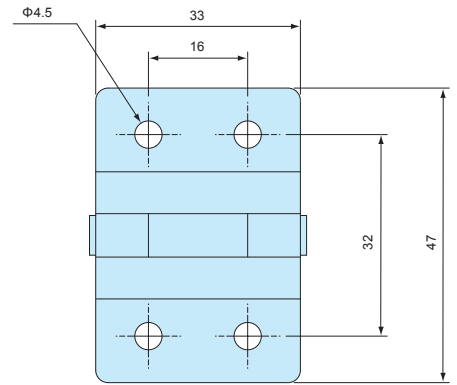
**BCH SERIES**

**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

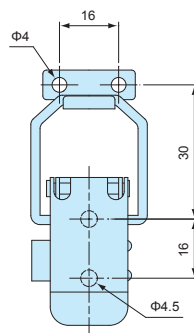
**Product no. / Suitable box**

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

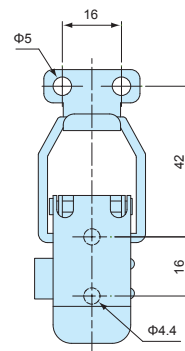
**BCL SERIES**

**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**

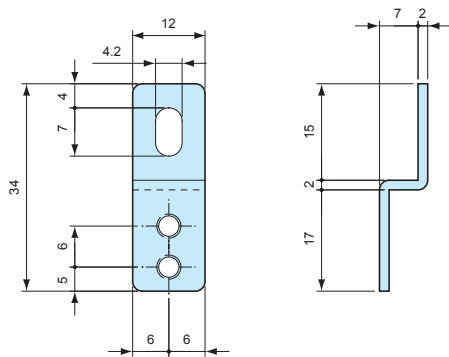
Product no.	Suitable box	Pack of
BCM-1	BCAS series (Not available for BCAS050604, 050605 models)	1
BCM-2	BCAL series	1

**CK SERIES**

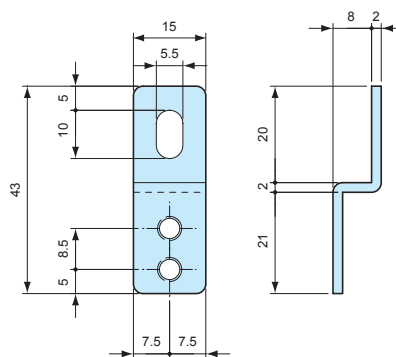
**STAINLESS STEEL MOUNT BRACKET**



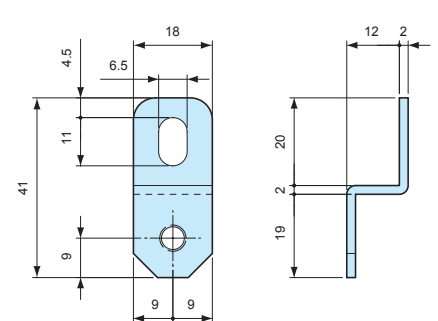
CK-34Z dimensions



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**

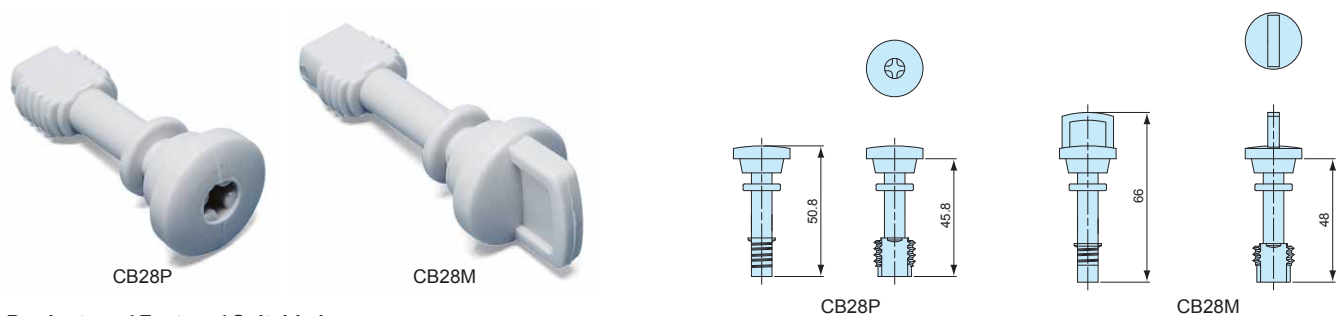
Product no.	Material	Color	Pack of
CB20	Fiberglass • Nylon	White gray	1
CB35	Fiberglass • Nylon	White gray	1
CB50	Fiberglass • Nylon	White gray	1

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

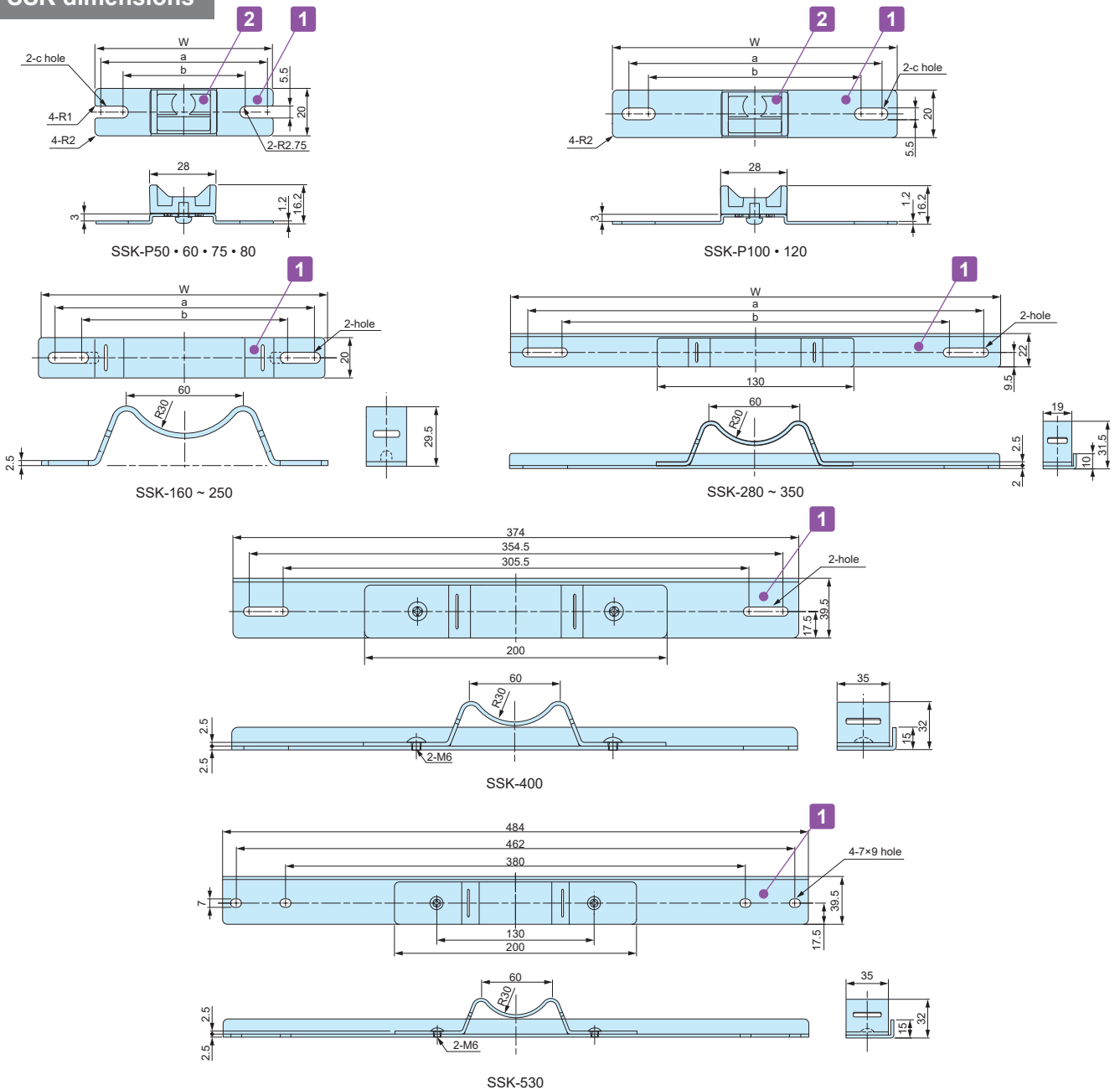


- Stainless steel pole mounting bracket for SPCM • SPCP and BCAL • BCAS series.
- Easy pole mount with the use of SSK-B mounting screw and PKB mounting belt.
- DXF/DWG/PDF drawings available on our website.
- SSK-P models includes plastic mounting brackets.



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**



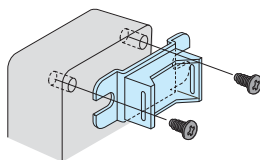
- Mounting screw set for use with SSK pole mounting bracket.
- See chart on page SSK-3 for appropriate bracket/screw/box combination.
- Material / Finish : Stainless steel / Unfinished.

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

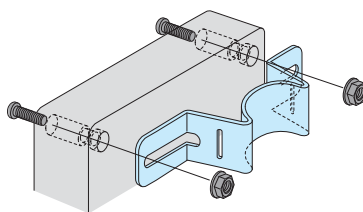
■ Installation Example

BCAS050604, 050605



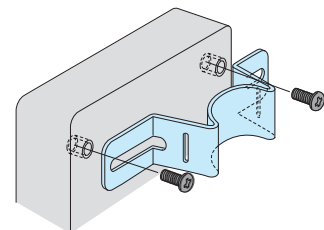
Use screws included with SSK-P

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

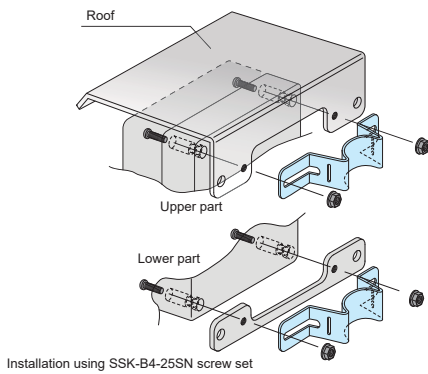
※Use screws included with SSK bracket for vertical mount

## 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

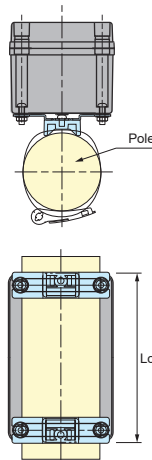
- For installation of SR series outdoor roof on SPCM • SPCP series SR series (For SPCM • SPCP - see page SPCM • SPCM-ACC-2)



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

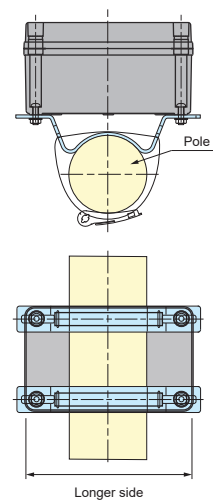
### Vertical mount

(Longer vertical side)



### Horizontal mount

(Longer horizontal side)



**WPMB-M4-3** SERIES

**POLE MOUNTING BRACKET**



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

**Components**

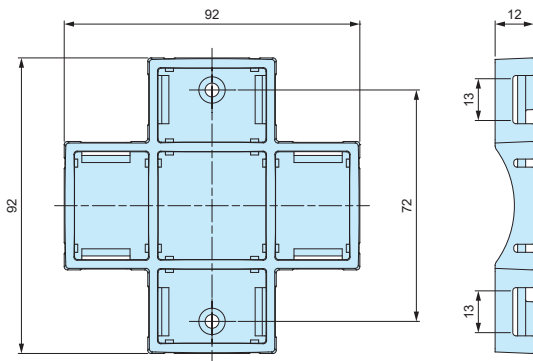
No.	Part name	Pcs	Material	Color / Finish
1	Bracket	1	ASA UL94HB	White gray • Dark gray
2	Sealing washer	2	NBR, SPCC	Black
3	Screw (M4-10 Pan head)	2	Stainless steel	Unfinished
4	Hexagonal nut (M4 x 3 types)	2	Stainless steel	Unfinished

**Product no. / Dimensions**

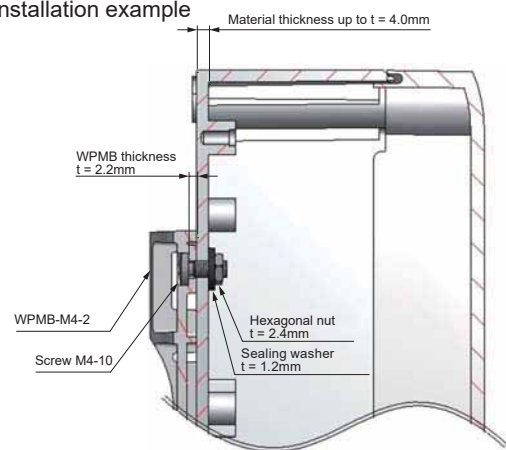
Product no.		Material thickness	Tightening torque	Tensile strength	Weight (g)
• White gray	• Dark gray				
WPMB-M4-3G	WPMB-M4-3D	Up to t = 4.0mm	0.45N • m	5 kg	26.5

■ Listed tightening torque values are for reference only. Actual required torque may differ.

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



**Installation example**



**PKB** SERIES

**POLE MOUNTING BELT**



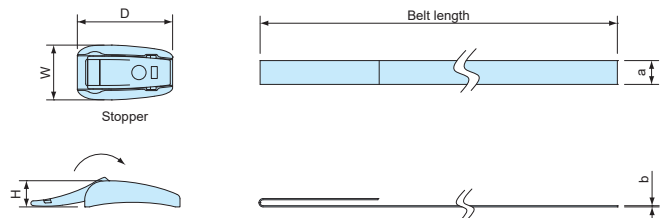
PKB-10PM, 10P



PKB-10S, 20S

- New shorter belt type PKB-10PM is available for  $\Phi 25$  to  $\Phi 60$ mm poles. Other belt types are for  $\Phi 60$  to  $\Phi 400$ mm poles.
- Designed for one time use only (not reusable).
- Strong stainless steel clamping type and easy installation plastic type are available.
- Use SSK • WPMB mounting bracket for installation onto a pole.

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



**Components**

Part name	Pcs	Material	Color / Finish
Stopper	2	POM • Stainless steel SUS304	Black • Barrel finish
Belt	2	PET • Stainless steel SUS430	Gray • Bright Annealed finish

**Product no. / Dimensions**

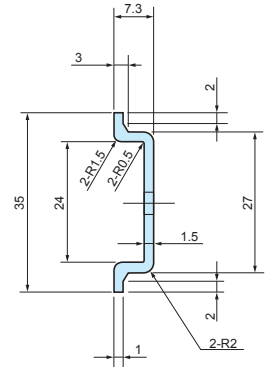
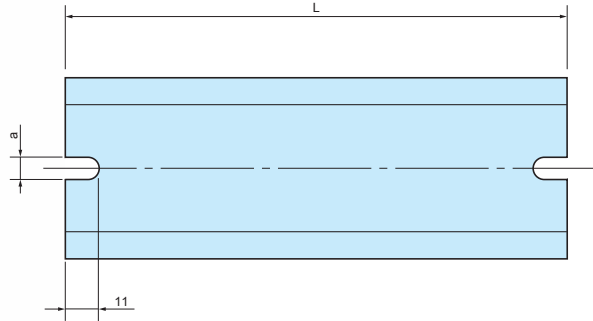
Product no.	W	D	H	a	b	Belt material	Belt length	Tensile strength (horizontal)	Weight (g)	Pack of
<b>NEW</b> PKB-10PM	24	23	11	10	0.5	PET	500mm	0.8 kN	14	2
PKB-10P	23	40	11	10	0.5	PET	1,500mm	1.3 kN	31.8	2
PKB-10S	(16.5)	(49.5)	12	10	0.3	Stainless steel	1,500mm	1.4 kN	101.6	2
PKB-20S	(27.4)	(49.5)	12	20	0.3	Stainless steel	1,500mm	2.9 kN	182.2	2

FDR SERIES

DIN-RAIL



- DIN rail for installation of terminals, relays or switches inside enclosures.
- Available in different models and lengths to fit a wide variety of mounting boss pitch.
- FDR-1000 is available if customized length is required.



Feature

Material	Finish
Extruded Aluminium A6063S-T5	Silver anodized

Product no. / Dimensions

Product no.	L	a	Matching boss pitch
FDR- 50	50	4.2	32 ~ 42
57	57	4.2	39 ~ 49
66	66	4.2	48 ~ 58
77	77	4.2	59 ~ 69
80	80	4.2	62 ~ 72
87	87	4.2	69 ~ 79
92	92	4.2	74 ~ 84
100	100	4.2	82 ~ 92
106	106	4.2	88 ~ 98
110	110	4.2	92 ~ 102
120	120	4.2	102 ~ 112
128	128	4.2	110 ~ 120
137	137	4.2	119 ~ 129
142	142	4.2	124 ~ 134
146	146	4.2	128 ~ 138
150	150	4.2	132 ~ 142
168	168	4.2	150 ~ 160
170	170	4.2	152 ~ 162
186	186	4.2	168 ~ 178
202	202	4.2	184 ~ 194
205	205	4.2	187 ~ 197
223	223	4.2	205 ~ 215
226	226	4.2	208 ~ 218
235	235	4.2	217 ~ 227
242	242	4.2	224 ~ 234
249	249	4.2	231 ~ 241
283	283	4.2	265 ~ 275
300	300	4.2	282 ~ 292
350	350	4.2	332 ~ 342
450	450	4.2	432 ~ 442
550	550	4.2	532 ~ 542

Product no.	L	a	Matching boss pitch
FDR-B102	102	6.5	86 ~ 92
<b>NEW</b> B124	124	6.5	108 ~ 114
B142	142	6.5	126 ~ 132
B160	160	6.5	144 ~ 150
B165	165	6.5	149 ~ 155
B176	176	6.5	160 ~ 166
B183	183	6.5	167 ~ 173
B223	223	6.5	207 ~ 213
B260	260	6.5	244 ~ 250
B283	283	6.5	267 ~ 273
B303	303	6.5	287 ~ 293
B338	338	6.5	322 ~ 328
B360	360	6.5	344 ~ 350
B376	376	6.5	360 ~ 366
B383	383	6.5	367 ~ 373
B463	463	6.5	447 ~ 453
B560	560	6.5	544 ~ 550
B623	623	6.5	607 ~ 613
FDR-1000	1000	—	—

■ 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

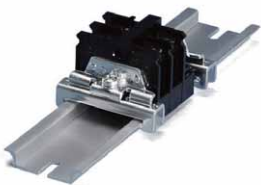
BCAS series

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)



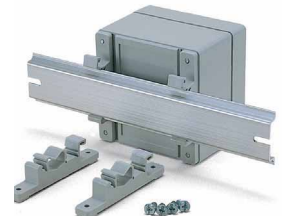
DIN-Rail stopper bracket TKR series  
See page DIN-ACC-2



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

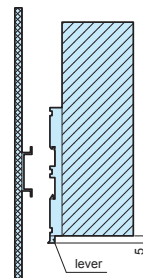
**DRA SERIES**

**DIN-RAIL MOUNTING BASE**



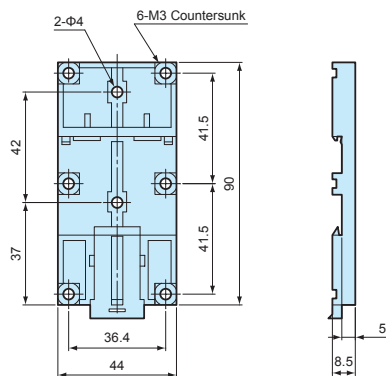
**NOTE**

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

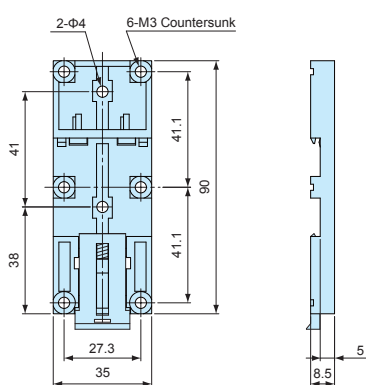


- For installation of enclosures, PCB and other parts onto a DIN rail.
- Simple installation and removal via the pull lever.

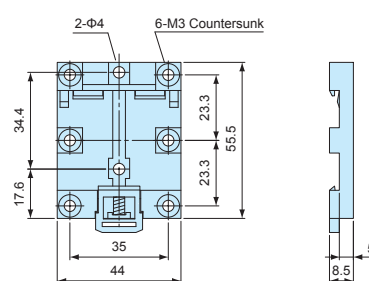
DRA-1



DRA-2



DRA-3

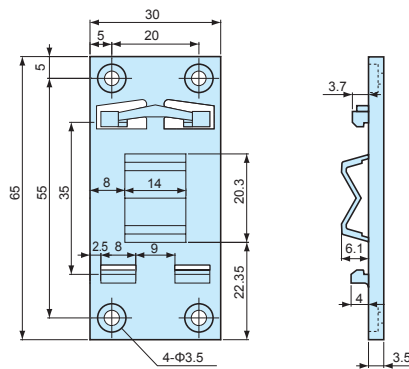


**Product no. / Dimensions**

Product no.	Material (body)	Material (lever)	Color	Weight (g)	Max load (kg)
DRA-1	PPE : SB UL94V-1	Nylon 66 UL94V-2	Black : Milky white	16.4	5
DRA-2	PPE : SB UL94V-1	Nylon 66 UL94V-2	Black : Milky white	14.5	5
DRA-3	PPE : SB UL94V-1	Nylon 66 UL94V-2	Black : Milky white	10.4	5

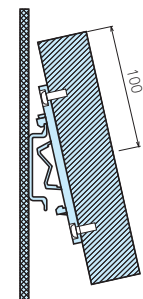
**DRT SERIES**

**DIN-RAIL MOUNTING BASE**



**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.

**Product no. / Dimensions**

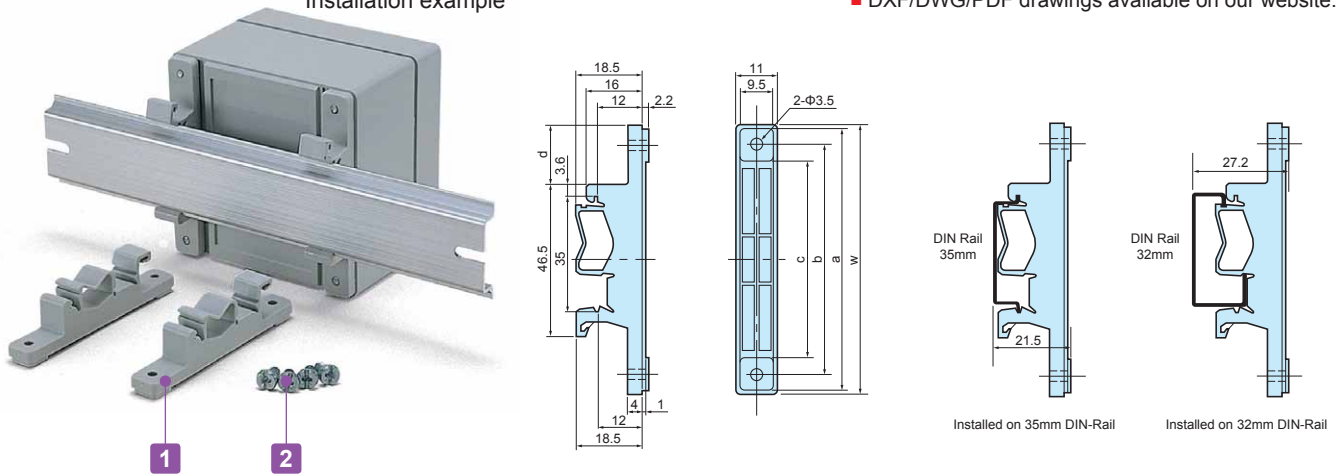
Product no.	Material	Color	Weight (g)	Max load (kg)
DRT-1	PBT UL94V-0	Light gray	7.3	1

**CKD SERIES**

**DIN-RAIL MOUNTING FEET**

Installation example

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



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

Technical Data
Max load : 3kg

**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	Screw	Unichrome plated

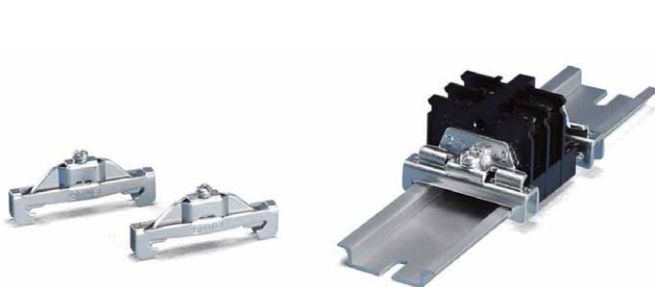
**Product no. / Dimensions**

Product no.	W	a	b	c	d	Pack of
CKD- 80	77	75	66	56	17	2
CKD-120	117	115	106	96	37	2
CKD-160	157	155	147	136	57	2

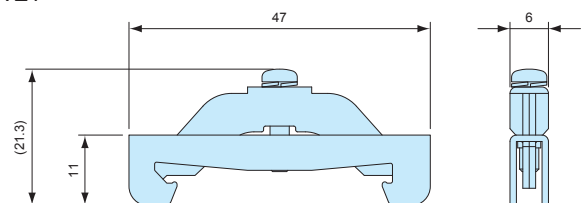
**TKR SERIES**

**DIN-RAIL TERMINAL BLOCKS END STOPPER**

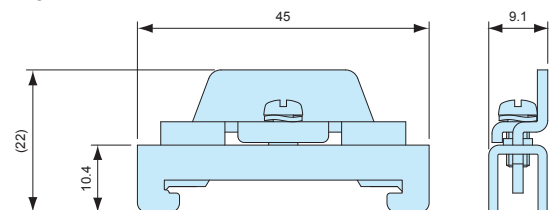
■ DXF/DWG/PDF drawings available on our website.



TKR-TWE1



TKR-JTXE3



- 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, TKR-JTXE3 is recommended for providing additional support.

**Product no. / Feature**

Product no.	Material	Color / Finish	Pack of
TKR-TWE1	Steel sheet	Trivalent chromate	2
TKR-JTXE3	Steel sheet	Trivalent chromate	2



# PMF-6B

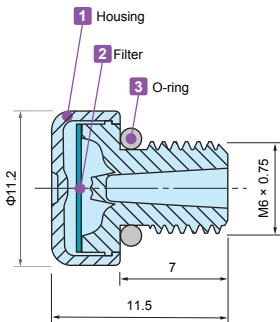
# SMALL PROTECTIVE VENT



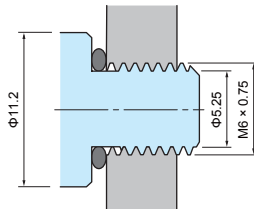
Application example

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

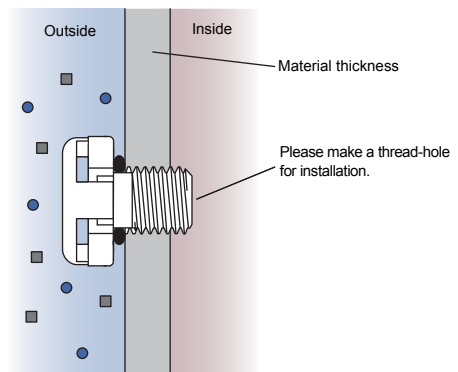
## PMF-6B dimensions



## Hole milling drawings



## Installation drawings



### Technical Data

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

### Product no. / Dimensions

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

PMF-12M

STAINLESS STEEL PROTECTIVE VENT

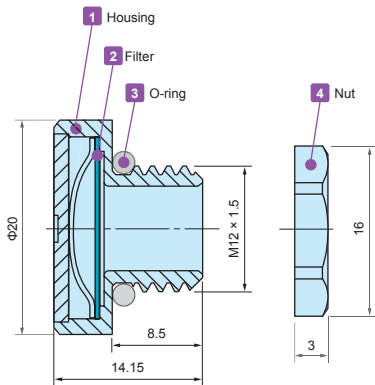
★ ★ NEW

IP68 IP69K

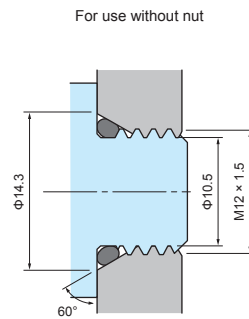


- Stainless steel protective vent for superior durability and chemical resistance.
- IP68 protection class (water depth 2 meters / 60 mins) and -40°C ~ +125°C operating temperature range allows it to be used in various environments.
- Suitable for enclosures with capacities of 20 liters or under.
- For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

PMF-12M dimensions

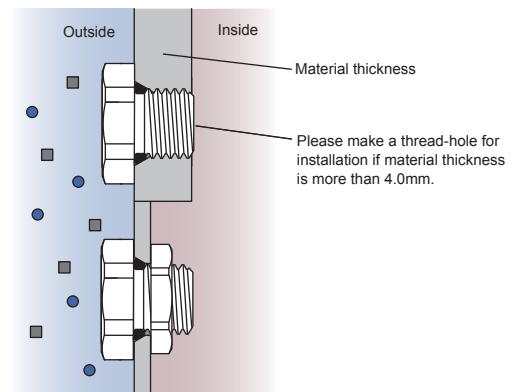


Hole milling drawings



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

Installation drawings



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

Technical Data

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

Product no. / Dimensions

Product no.	Material				G		Nut SW
	1 Housing	2 Filter	3 O-ring	4 Nut	Thread size	Mount hole	
PMF-12M	Stainless steel	PTFE	Silicone	Brass • Nickel plated	M12 x 1.5	Φ12.2	15

PMF SERIES

PROTECTIVE VENT

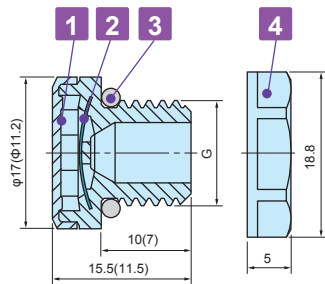


Application example

- Protective vents prevents the ingress of a variety of contaminants, such as water, dust and other particules while allowing water vapor molecules to diffuse through the microporous membrane.
- Equalize pressure and reduce condensation by allowing airflow into and out of sealed enclosures.
- With an IP68 protection class (water depth 2 meters / 60 mins) and -40°C ~ +125°C operating temperature range, it can be used in harsh environmental conditions.
- PMF-6B works up to 2 liters capacity enclosures. Whereas, PMF-12 models work for up to 5 liters and PMF-12HS models work for up to 50 liters.
- For outdoor use, more efficient to install on the side(s).
- Recommended to use for industrial, electric, electronics purpose only.

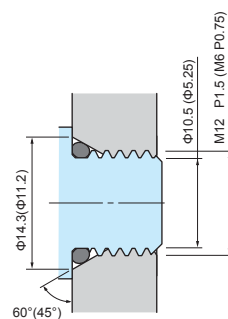
PMF dimensions

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



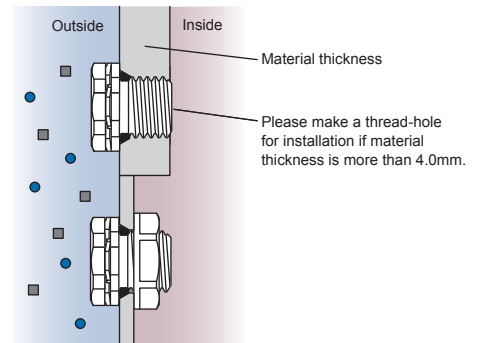
( ) values are for PMF-6B.  
Lock nut is not available for PMF-6B.

Hole milling drawings



■ While  $\Phi 12.2\text{mm}$  through-hole is sufficient for installation,  $60^\circ$  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, and  $\Phi 12.2\text{mm}$  through-hole is sufficient.

Technical Data

Product no.	PMF-6B	PMF-12	PMF-12HA
Airflow	300ml / min (dp = 7 kPa)	450ml / min (dp = 7 kPa)	4000ml / min (dp = 7 kPa)
Recommended Torque	0.2 ~ 0.4 N · m	0.6 ~ 0.8 N · m	0.6 ~ 0.8 N · m
Certifications	IEC60529 (Protection class test): IP66 • IP67 • IP68 • IP69K (Not for PMF-6B) IEC60068-2-1, 2, 14 (Heat resistance test): - 40°C ~ +125°C (~+150°C for PMF-6B) IEC60068-2-78 (Humidity test): 85°C • 85% humidity • 1000 hours IEC60068-2-64 (Vibration test) (PMF-6B only) UL94V-0 (Flame-resistant) • UL746C f1		

Product no. / Dimensions

Product no.		Material				G		Nut SW
● Light gray	● Black	1 Housing	2 Filter	3 O-ring	4 Lock nut	Thread size	Mount hole	
—	<b>NEW</b> PMF-6B	PA6 (Body) PA66 (Cap)	PTFE	Silicone	n/a	M6 x 0.75	—	—
PMF-12S	PMF-12B	PA6	PTFE	Silicone	PA6 (UL94V-2)	M12 x 1.5	$\Phi 12.2$	17
PMF-12HAS	PMF-12HAB	PA6	PTFE	Silicone	PA6 (UL94V-2)	M12 x 1.5	$\Phi 12.2$	17

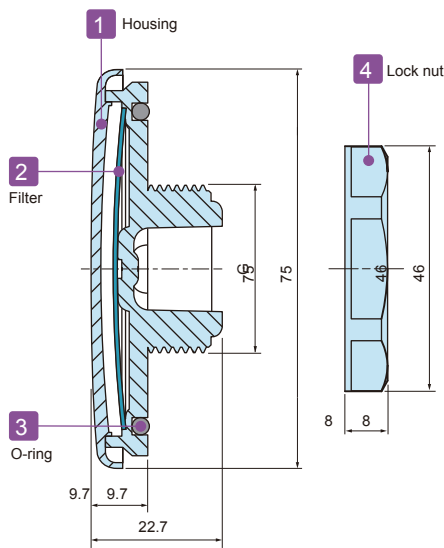
PMF-32 SERIES

LARGE PROTECTIVE VENT

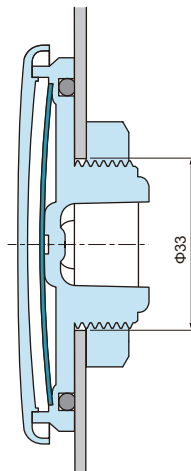


- Maintaining high airflow for large enclosures in an outdoor environment.
- Equalize pressure and reduce condensation by allowing airflow into and out of sealed enclosures.
- Simple and flat design allows it to be used on a wide variety of enclosure types.
- IP68 protection class rated with an operating temperature range of -40°C ~ +125°C allows it to be used in harsh environments.
- Compliant with Solar industry testing IEC62108 standards.
- For superior performance, installation on the side of the enclosure is recommended.

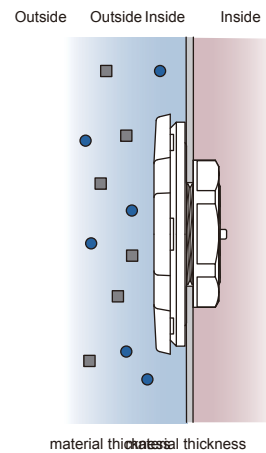
PMF-32 Dimensions



Hole milling drawings



Installation drawings



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

Technical Data

Airflow	16 ℓ / min (dp = 12 mbar)
Recommended torque	5 N · m
Certifications (without nut)	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 • 1000 hours IEC62108.10.8 • 9 (Solar industry test): Freezing - high temperature test • Hail impact test UL94V-0 (Flame-resistant) • UL746C

Product no. / Dimensions

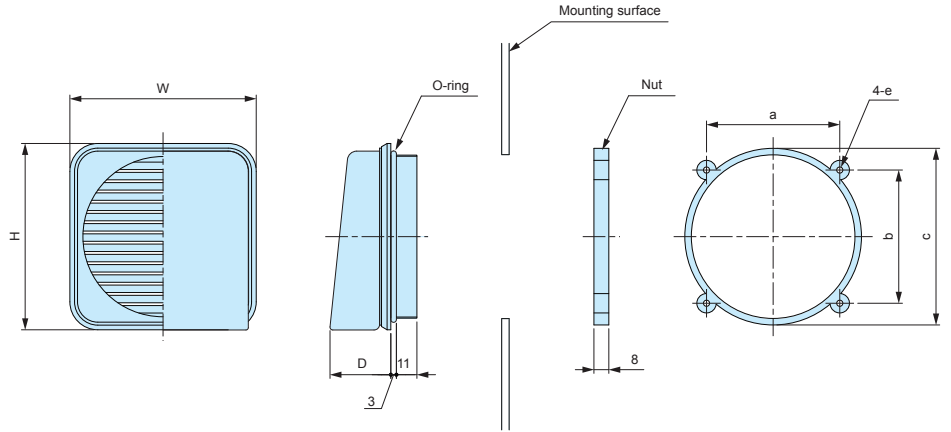
Product no.	Material				G		Nut SW
	1 Housing	2 Filter	3 O-ring	4 Lock nut	Thread size	Mount hole	
PMF-32S	PC	PTFE	Silicone	PA6	M32×1.5	Φ33	41.5

V SERIES

VENTILATION LOUVER



- Recommended for condensation prevention and heat dissipation.
- 2 models available: ABS V60, V80 for BCAP and BCAR series, and PC V60S, V80S for BCPC, BCPK and BCAR series.
- Suitable to be used on a variety of enclosure types, series and models.



Product no. / Dimensions

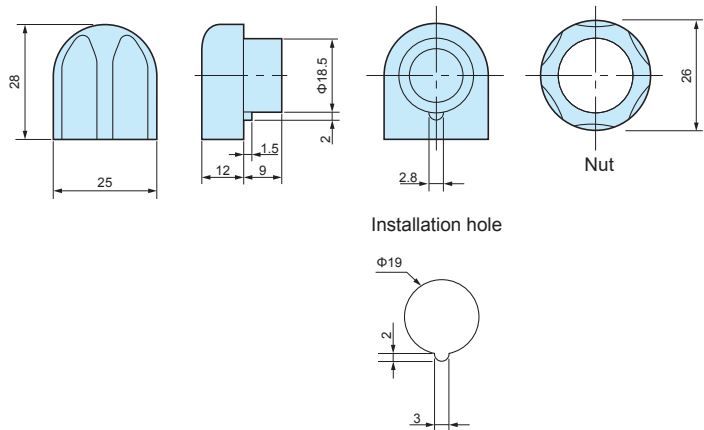
Product no.	Material	Color	Installation hole	W	H	D	a	b	c	e
V60	ABS	White gray	Φ63	74.5	74.5	30.8	50.5	50.5	70	Φ3.8
V80	ABS	White gray	Φ88	100	100	36	71.5	71.5	94.8	Φ3.3
V60S	Polycarbonate	Light gray	Φ63	74.5	74.5	30.8	50.5	50.5	70	Φ3.8
V80S	Polycarbonate	Light gray	Φ88	100	100	36	71.5	71.5	94.8	Φ3.3

■ O-ring material: NBR Black

VF SERIES

VENTILATION PARTS

VF-1

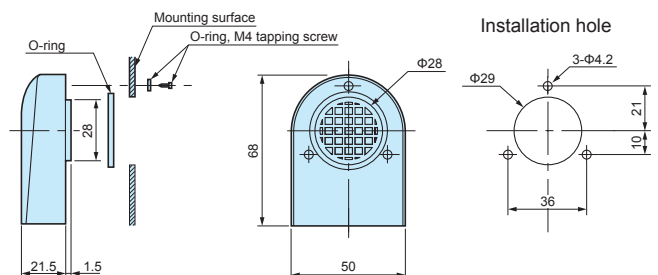


Technical Data	
Protection class: VF-1	IP33
VF-2	IP24

Product no.

Product no.	Material / Color
VF-1	Polyamide / White gray
VF-2	Polyamide / White gray

VF-2



# TMB SERIES

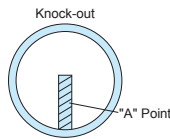
# TERMINAL JUNCTION BOX



- Terminal junction box with built-in terminal block.
- IP65 protection class.
- Made of flame-resistant ABS plastic (UL94V-0).
- 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

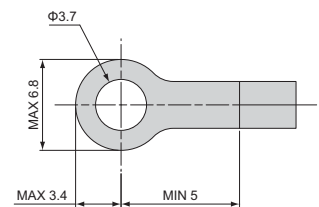
Protection class: IP65  
 Operating temperature:  $-10^{\circ}\text{C} \sim +60^{\circ}\text{C}$   
 Recommended torque:  
 TMB-4P • 6P • 10P :  $0.6\text{N} \cdot \text{m}$   
 TMB-15PS • 20P • 20PL :  $1\text{N} \cdot \text{m}$



### Terminal Block Specification

Rated voltage	400V
Rated current	17.5A
Applicable wire	$1.5\text{mm}^2$
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	ABS UL94V-0	Light gray
2	Body	1	ABS 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 (15PS, 20P, 20PL 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 - 15PS, 20P, and 20PL models.

### Accessories (Optional parts)



Shorting bar SBR series  
See page SBR-1



Cable gland  
See cable gland pages



Mounting bracket CK-34Z  
See page BCAS • BCAL-ACC-2

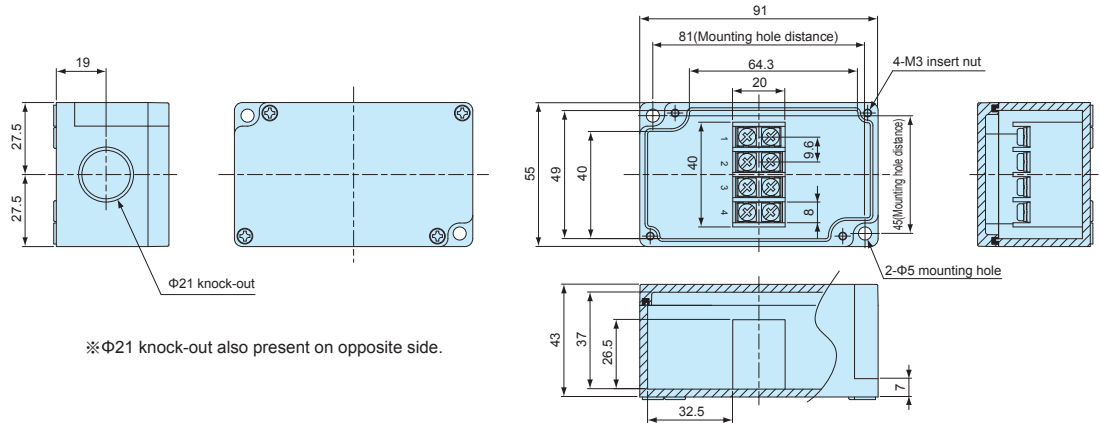
Product no. / Dimensions

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
TMB-15PS	185	100	70	15P	412
TMB-20P	160	160	70	10P x 2	560
TMB-20PL	230	100	70	20P	484

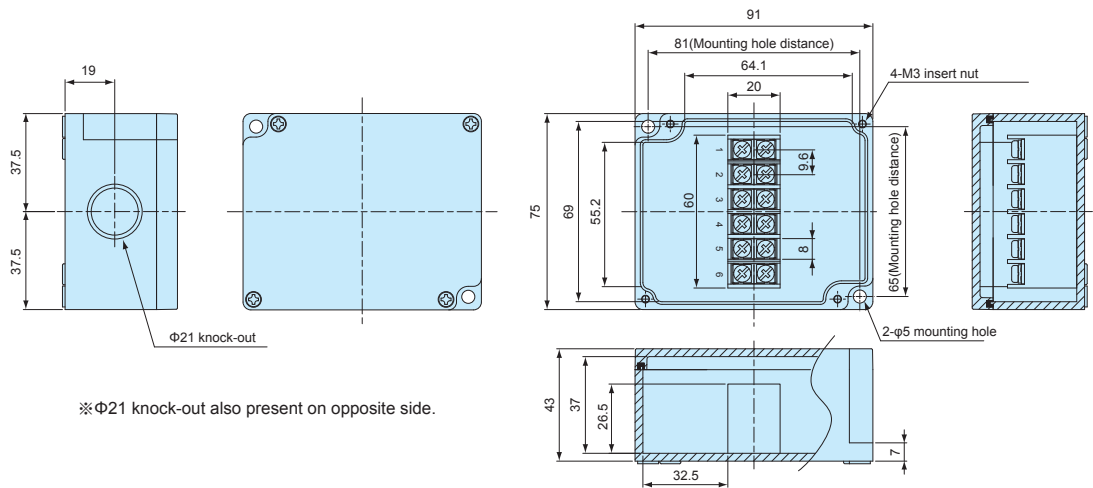
TMB dimensions

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

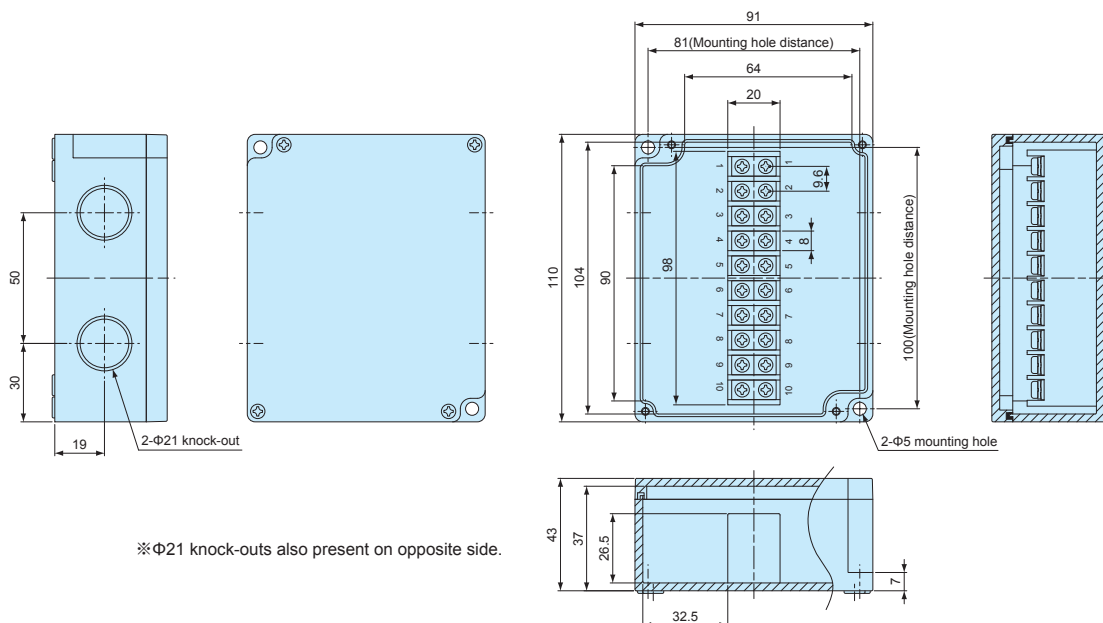
TMB-4P



TMB-6P

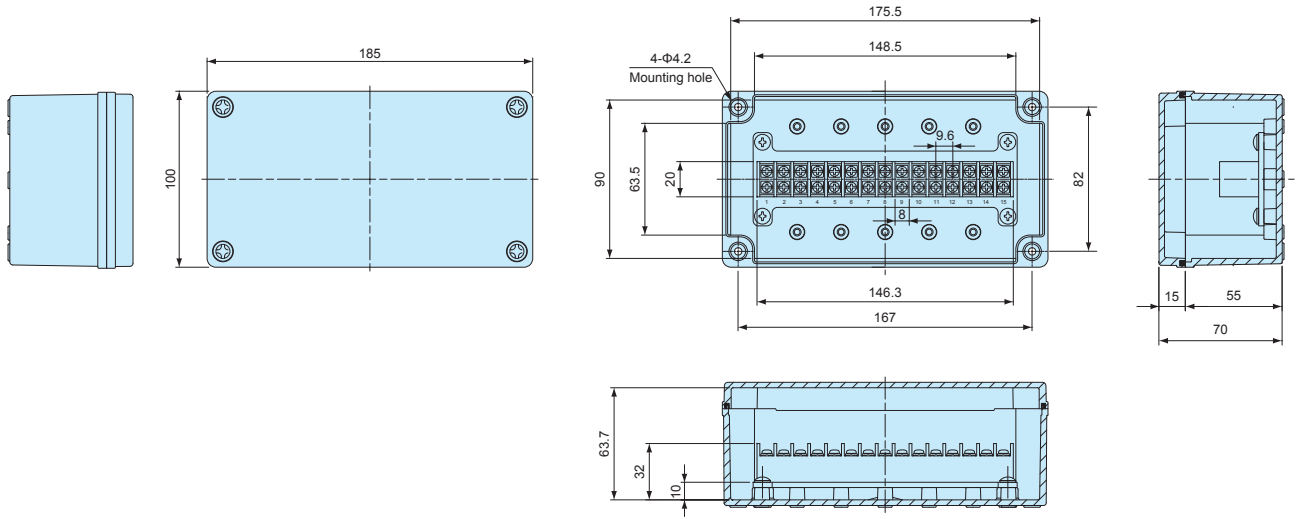


TMB-10P

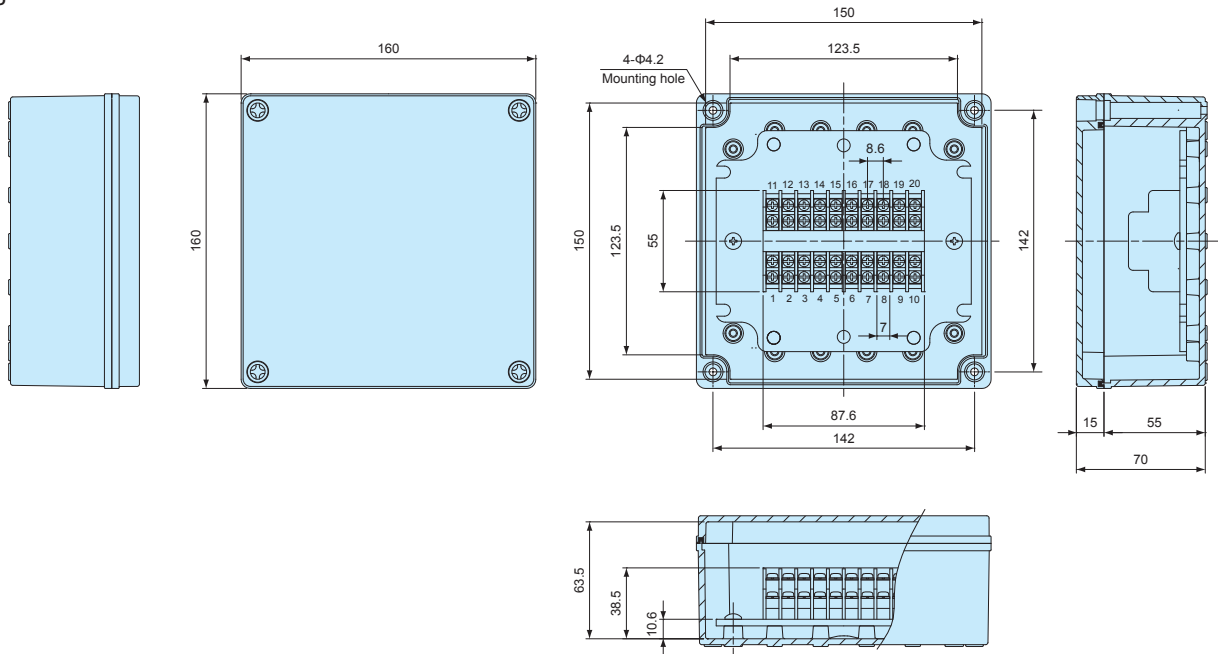


TMB-2

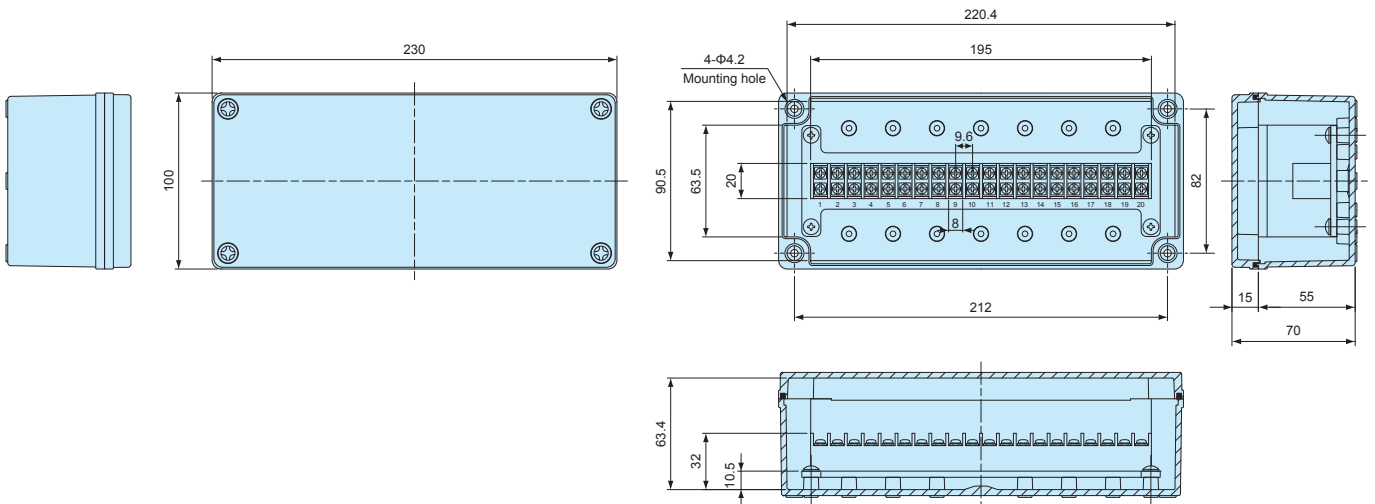
**TMB-15PS**



**TMB-20P**



**TMB-20PL**





# TMC SERIES

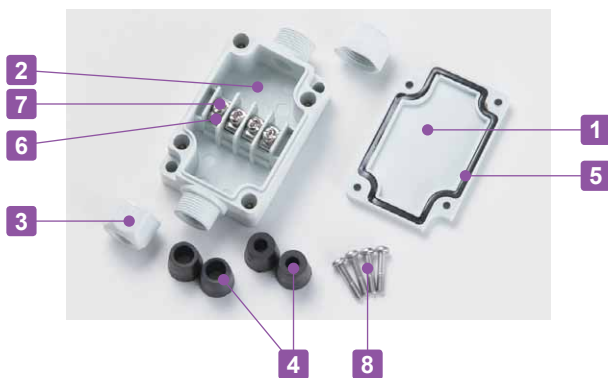
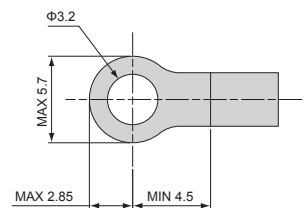
# TERMINAL JUNCTION BOX



- 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°C ~ +75°C

Applicable crimp terminal  
R1.25-3



### Terminal Block Specification

Rated voltage	250V
Rated current	15A
Applicable wire	1.25mm <sup>2</sup>
Standard tightening torque	0.5N · m

### Components

No.	Part name	Pcs	Material	Color / Finish
1	Cover	1	PBT UL94V-0	Light gray · Black
2	Base	1	PBT UL94V-0	Light gray · Black
3	Cable cap	2	PBT UL94V-0	Light gray · Black
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 page SBR-1



Rubber Bush RB series  
See page RB · SZ-1

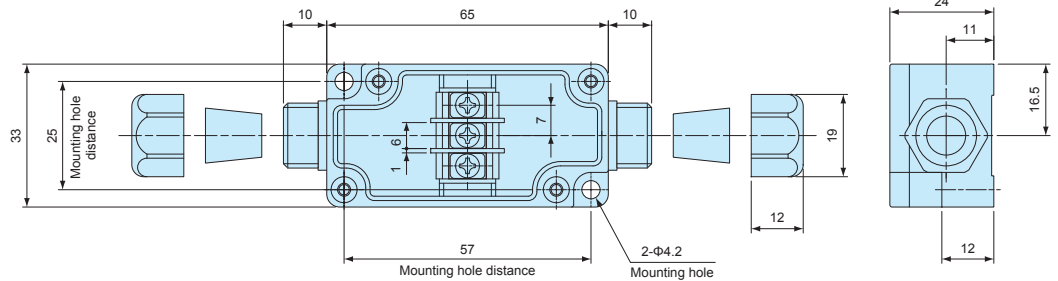
Product no. / Dimensions

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

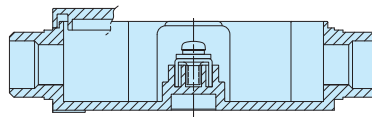
TMC dimensions

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

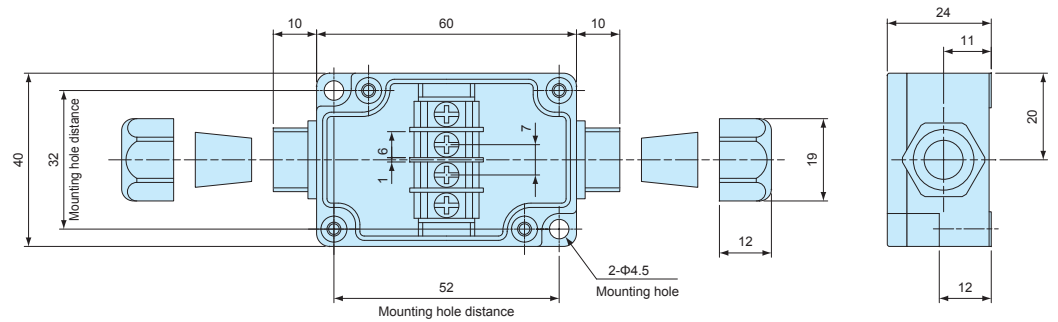
TMC-3P



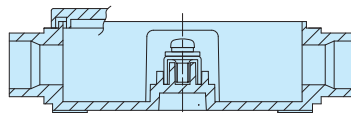
Inner diameter of rubber bush	Cable range
Φ5.0	Φ4 ~ Φ5
Φ7.4	Φ6 ~ Φ7



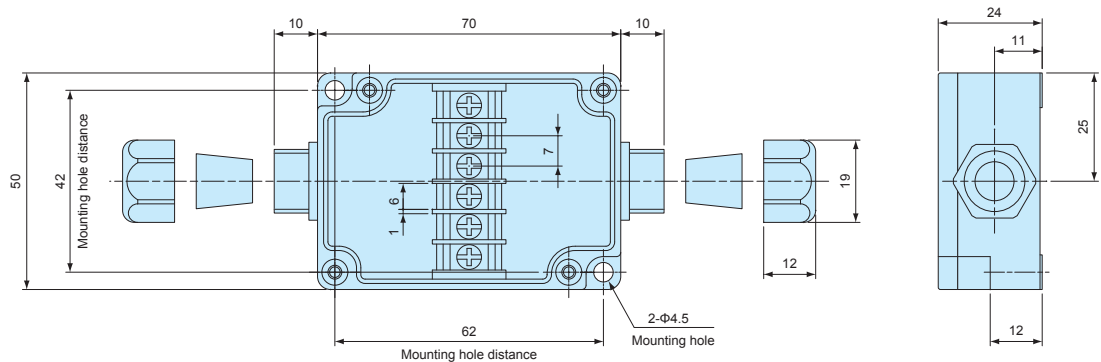
TMC-4P



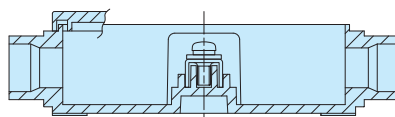
Inner diameter of rubber bush	Cable range
Φ5.0	Φ4 ~ Φ5
Φ7.4	Φ6 ~ Φ7



TMC-6P

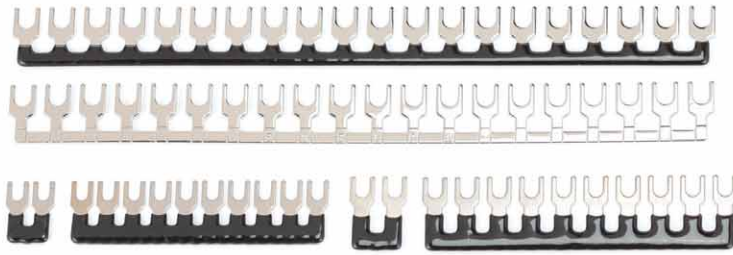


Inner diameter of rubber bush	Cable range
Φ5.0	Φ4 ~ Φ5
Φ7.4	Φ6 ~ Φ7



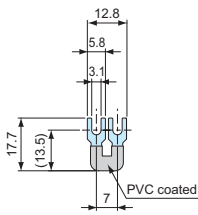
# SBR SERIES

# SHORTING BAR

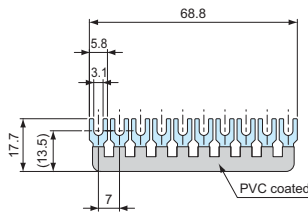


- Shorting bar for common-wiring.
- SBR70-10P, SBR85-10P, SBR95-20P, and SBR95-20N can be cut accordingly into required poles.
- PVC coated. SBR95-20 available in both PVC coated (SBR95-20P) and non PVC coated (SBR95-20N) models.
- See chart below for suitable box.

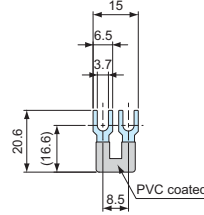
SBR70-2P



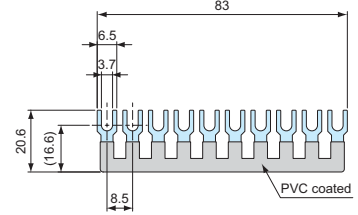
SBR70-10P



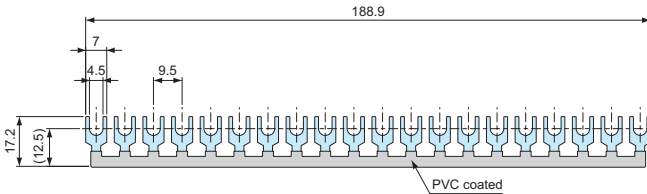
SBR85-2P



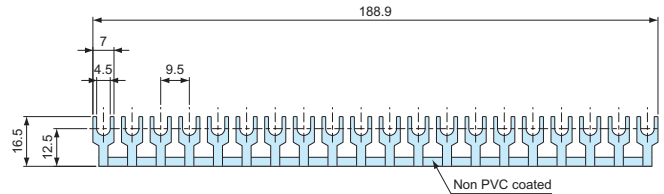
SBR85-10P



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)

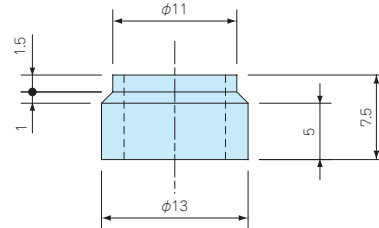
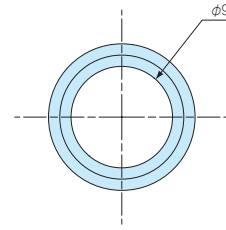
### Product no. / Feature

■ 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. / Feature**

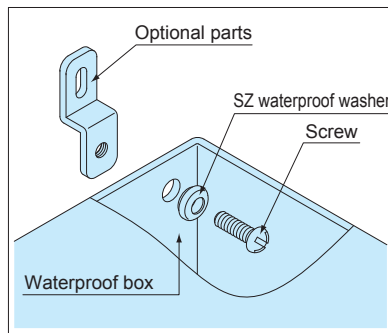
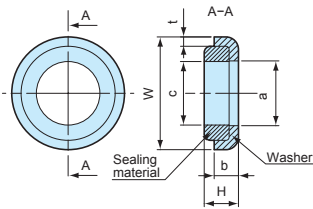
Product no.	Material	Color	Cable range	Pack of
RB-9	NBR	Black	$\Phi 8 \sim \Phi 9$ mm	2

**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).



- Shape of the sealing material vary by product.

Technical Data
Water pressure resistance: M3 ~ M10 : 200kg/cm <sup>2</sup> 5min M12 ~ M16 : 100kg/cm <sup>2</sup> 5min

**Product no. / Dimensions**

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

# NANUK™

PROFESSIONAL PROTECTIVE CASES

## THE FUTURE OF PROTECTION CASES

Tough yet stylish.  
Durable and elegant.  
Easily customizable.  
Endless possibilities abound.



OUTDOOR



NANUK-1

# MEASUREMENT



# DRONE



# MEDICAL



# TRANSPORT



# DEFENCE



# NANUK™ THE NANUK ADVANTAGE

## IP65 PROTECTION CLASS

IP65 protection class for use in various environments.

Equipped with durable and weather resistant EPDM gasket.

Waterproof pressure relief valve enables pressure within the case to be equalized with the surrounding, allowing it to be opened with ease, while keeping it waterproof.



## IMPACT RESISTANT-NK-7 RESIN

Impact resistant, lightweight, and armed with reinforced PP, NK-7 resin body.

Keep your items safe from impact damage.



## 22 DIFFERENT SIZES

A large selection of 22 different sizes, ranging from small (148.5 x 109.5 x 43mm) to large (1,196 x 440 x 168mm) types.

Smallest 3 sizes are available in 5 different colors: black, white, clear, lime and marine colors.

Other sizes are available in either black or yellow.



## PROTECTIVE SPONGE FOAM

Nanuk cases are also available with a protective sponge foam.

Sponge foam are fitted to the case, and can also be purchased as separate option (NKSP series).

NKSP sponge foam comes with pre-cubed foam to allow for easy modification by removing the required squares.

(※No pre-cubed foam available for NKSP990).

Sponge customization is also available.

(See page SP-Custom-1~SP-Custom-2)



## POWERCLAW LATCHING SYSTEM and SOFT GRIP HANDLE

NANUK's patented PowerClaw latching system uses compressive force to keep your case tightly clamped.

Integrated slide lock offers added security, preventing it from accidental opening during transport or when dropped.

NANUK's TPE soft grip handle makes carrying not only comfortable, but also convenient.

Handle can be folded down to be flushed with the case when not in use.



※Latch with TSA lock on NKK series



## 100% STAINLESS STEEL PARTS

Metallic parts are made from SUS304 stainless steel.

Suitable to be used in environments with water splashes and so on.



## OPTIONAL ALUMINIUM PANEL for YOUR DEVICE

Optional aluminium panel can make NANUK into your original controller, measuring device or transmitter.

See page NKAP-1 for the details of optional aluminium panel.

NKAP panel customization is available. (See NKAP-2 for more details).

### ●CUSTOMIZATAION on ALUMINIUM PANEL



CUSTOMIZE





# NK SERIES

# IP65 CARRYING CASE



- Durable and stylishly designed waterproof carrying case.
- Selectable in 18 different sizes, with each model available with, and without foam.
- Suitable for storing electronics and delicate devices such as measuring device, camera, broadcasting device, electric tool, medical equipment, and so on.
- Optional aluminium panel can turn the NK series into your own original controller, measuring device or transmitter.



Technical Data
Protection class : IP65
Operating temperature : -20°C~+60°C



Hinge pin shape varies based on model type

## Components

No.	Part name	Material
1	Cover · Base	Reinforced PP (NK-7)
2	Latch	Nylon 66
3	Handle grip	Elastomer
4	Pressure release valve (※1)	Nylon 66 · PTFE

No.	Part name	Material
5	Hinge pin	Stainless steel
6	Gasket	EPDM
7	Foam	Polyurethane / 12.7mm Pitch Pre-cut cubed foam (※2)

※1 Automatic pressure release valve enables pressure within the case to be equalized with the surrounding, allowing it to be opened with ease, while keeping it waterproof.

※2 Pitch of Pre-cut cubed foam for NK940, 945, and 950 models is 15mm.

## Accessories(Optional parts)



Divider DVI series  
See page NANUK-ACC-1



Aluminium panel NKAP series  
See page NKAP-1~NKAP-2



Shoulder strap NSTP series  
See page NANUK-ACC-3



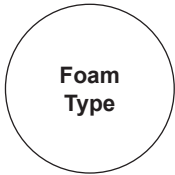
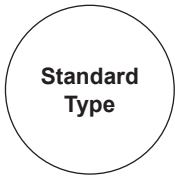
Padlock AB145S series  
See page NANUK-ACC-3



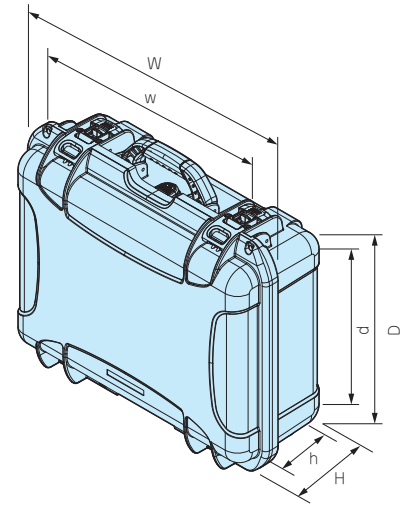
Nameplate sticker NKST series  
See page NANUK-ACC-3

■ Standard Type and Foam Type are available.

**NK dimensions**



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



※ See page NANUK-ACC-2 pages for optional NKSP foam.

**Product no. / Dimensions**

■ Standard type (without foam)

Product no.		Dimensions (External)			Dimensions (Internal)			Weight (kg)
● Black	● Yellow	W	D	H	w	d	h	
NK903B	NK903Y	231	173	97	180	114	79	0.6
NK904B	NK904Y	259	201	114	200	135	94	0.7
NK905B	NK905Y	318	257	152	220	170	131.5	1.6
<b>NEW</b> NK908B	<b>NEW</b> NK908Y	318	249	203	215	165	181	1.5
<b>NEW</b> NK909B	<b>NEW</b> NK909Y	321	229	111	268	151	86	1.0
NK910B	NK910Y	363	282	120	320	210	95.5	1.4
NK915B	NK915Y	393.5	307	173	320	210	152	2.1
NK918B	NK918Y	427	328	236	350	215	212	2.9
NK920B	NK920Y	424	340	173	360	240	152	2.4
<b>NEW</b> NK923B	<b>NEW</b> NK923Y	472	366	160	391	253	128	2.7
NK925B	NK925Y	475	376	178	410	270	159	2.9
NK930B	NK930Y	503	406	193	430	310	171	3.4
NK933B	NK933Y	503	409	254	430	300	233	3.9
NK935B	NK935Y	559	356	229	415	265	179	5.3
NK940B	NK940Y	557	429	216	480	320	197	3.9
NK945B	NK945Y	638	505	224	530	400	202	5.0
NK950B	NK950Y	579	465	297	420	360	247	7.0
NK960B	—	645	508	368	470	365	316	9.0

■ Foam type (with foam)

Product no.		Dimensions (External)			Dimensions (Internal)			Weight (kg)
● Black	● Yellow	W	D	H	w	d	h	
NK903BS	<b>NEW</b> NK903YS	231	173	97	180	114	79	0.63
NK904BS	<b>NEW</b> NK904YS	259	201	114	200	135	94	0.81
NK905BS	<b>NEW</b> NK905YS	318	257	152	220	170	131.5	1.7
<b>NEW</b> NK908BS	<b>NEW</b> NK908YS	318	249	203	215	165	181	1.7
<b>NEW</b> NK909BS	<b>NEW</b> NK909YS	321	229	111	268	151	86	1.2
NK910BS	<b>NEW</b> NK910YS	363	282	120	320	210	95.5	1.5
NK915BS	<b>NEW</b> NK915YS	393.5	307	173	320	210	152	2.4
NK918BS	<b>NEW</b> NK918YS	427	328	236	350	215	212	2.9
NK920BS	<b>NEW</b> NK920YS	424	340	173	360	240	152	2.7
<b>NEW</b> NK923BS	<b>NEW</b> NK923YS	472	366	160	391	253	128	3.1
NK925BS	<b>NEW</b> NK925YS	475	376	178	410	270	159	3.3
NK930BS	<b>NEW</b> NK930YS	503	406	193	430	310	171	3.9
NK933BS	<b>NEW</b> NK933YS	503	409	254	430	300	233	4.6
NK935BS	<b>NEW</b> NK935YS	559	356	229	415	265	179	6.0
NK940BS	<b>NEW</b> NK940YS	557	429	216	480	320	197	4.6
NK945BS	<b>NEW</b> NK945YS	638	505	224	530	400	202	6.0
NK950BS	<b>NEW</b> NK950YS	579	465	297	420	360	247	8.0
NK960BS	—	645	508	368	470	365	316	10.5

**NKK SERIES**

**IP65 CARRYING CASE with LOCK**



- Equipped with a TSA lock latch for security, or transportation as check-in baggage.
- Available in 15 different sizes, with 2 different types available Without foam and With foam.
- Optional aluminium panel can turn the NKK series into your own original controller, measuring device or transmitter.



Technical Data	
Protection class :	IP65
Operating temperature :	-20°C~+60°C



Latch with TSA lock



2 Keys included.

**What is TSA LOCK?**

TSA LOCK is a global security system which allows passengers to lock their luggage, while at the same time, permitting security authorities to inspect them without damage to the lock or luggage.



**Accessories(Optional parts)**



Divider DVI series  
See page NANUK-ACC-1



Aluminium panel NKAP series  
See page NKAP-1~NKAP-2



Shoulder strap NSTP series  
See page NANUK-ACC-3



Foam NKSP series  
See page NANUK-ACC-2



Nameplate sticker NKST series  
See page NANUK-ACC-3



Hinge pin shape varies based on model type

**Components**

No.	Part name	Material
1	Cover · Base	Reinforced PP (NK-7)
2	Latch	Nylon 66 · Zinc alloy
3	Handle grip	Elastomer
4	Pressure release valve (※1)	Nylon 66 · PTFE
5	Hinge pin	Stainless steel

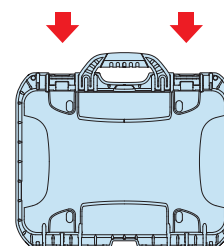
No.	Part name	Material
6	Gasket	EPDM
7	Foam	Polyurethane / 12.7mm Pitch Pre-cut cubed foam (※2)
8	Key	Brass · PP

※1 Automatic pressure release valve enables pressure within the case to be equalized with the surrounding, allowing it to be opened with ease, while keeping it waterproof.

※2 Pitch of Pre-cut cubed foam for NK940, 945, and 950 models is 15mm.

**NKK945 and NKK960 models**

Only 2 latches (below illustration) are equipped with TSA lock (out of 4 latches).



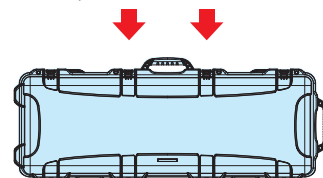
**Product no. / Dimensions**

**Standard type (without foam)**

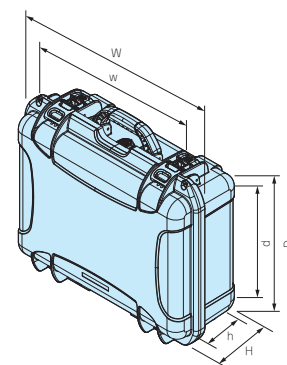
Product no.	Dimensions (External)			Dimensions (Internal)			Weight (kg)
	W	D	H	w	d	h	
● Black							
NKK905B	318	257	152	220	170	131.5	1.6
<b>NEW</b> NKK908B	318	249	203	215	165	181	1.5
NKK915B	393.5	307	173	320	210	152	2.1
NKK918B	427	328	236	350	215	212	2.9
NKK920B	424	340	173	360	240	152	2.4
<b>NEW</b> NKK923B	472	366	160	391	253	128	2.7
NKK925B	475	376	178	410	270	159	2.9
NKK930B	503	406	193	430	310	171	3.4
NKK933B	503	409	254	430	300	233	3.9
NKK935B	559	356	229	415	265	179	5.3
NKK940B	557	429	216	480	320	197	3.9
NKK945B	638	505	224	530	400	202	5.0
NKK950B	579	465	297	420	360	247	7.0
NKK960B	645	508	368	470	365	316	9.0
<b>NEW</b> NKK990B	1,196	440	168	1,070	340	143.5	8.3

**NKK990 model**

Only 2 latches (below illustration) are equipped with TSA lock (out of 4 latches).



**NKK dimensions**



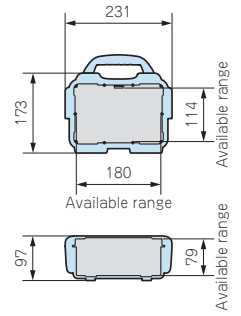
**Foam type (with foam)**

Product no.	Dimensions (External)			Dimensions (Internal)			Weight (kg)
	W	D	H	w	d	h	
● Black							
<b>NEW</b> NKK905BS	318	257	152	220	170	131.5	1.7
<b>NEW</b> NKK908BS	318	249	203	215	165	181	1.7
<b>NEW</b> NKK915BS	393.5	307	173	320	210	152	2.4
<b>NEW</b> NKK918BS	427	328	236	350	215	212	2.9
<b>NEW</b> NKK920BS	424	340	173	360	240	152	2.7
<b>NEW</b> NKK923BS	472	366	160	391	253	128	3.1
<b>NEW</b> NKK925BS	475	376	178	410	270	159	3.3
<b>NEW</b> NKK930BS	503	406	193	430	310	171	3.9
<b>NEW</b> NKK933BS	503	409	254	430	300	233	4.6
<b>NEW</b> NKK935BS	559	356	229	415	265	179	6.0
<b>NEW</b> NKK940BS	557	429	216	480	320	197	4.6
<b>NEW</b> NKK945BS	638	505	224	530	400	202	6.0
<b>NEW</b> NKK950BS	579	465	297	420	360	247	8.0
<b>NEW</b> NKK960BS	645	508	368	470	365	316	10.5
<b>NEW</b> NKK990BS	1,196	440	168	1,070	340	143.5	9.8

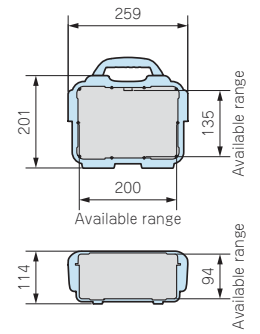
NK • NKK dimensions

DXF/DWG/PDF drawings available on our website.

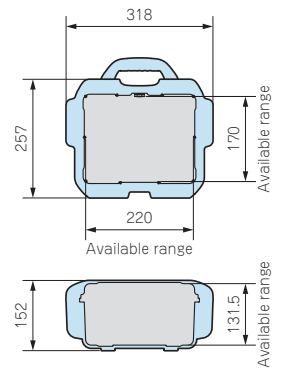
### NK 903



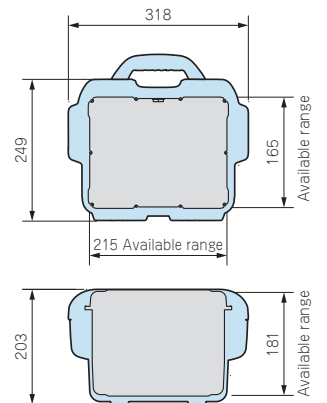
### NK 904



### NK/NKK 905



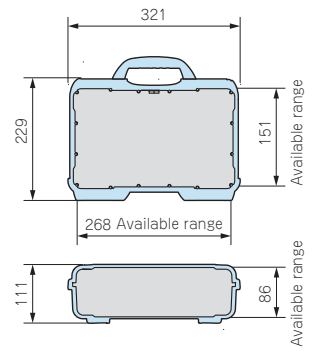
### NK/NKK 908 NEW



NK • NKK dimensions

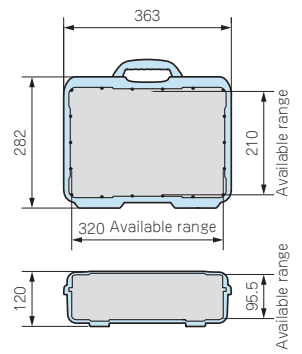
DXF/DWG/PDF drawings available on our website.

**NK 909** NEW



**NK 910**

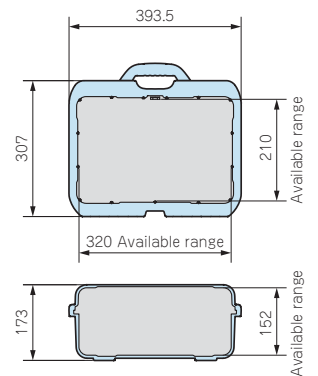
NK910 is able to install optional aluminium panels on both the cover and base. (See page NKAP-1~NKAP-2)



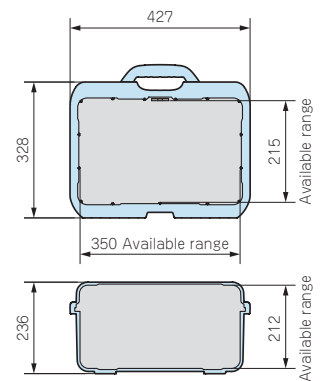
**NK/NKK 915**

**APPLICATION EXAMPLE**

EDUCATIONAL TABLET AID PACK  
Product by FUJISOFT (Japan)



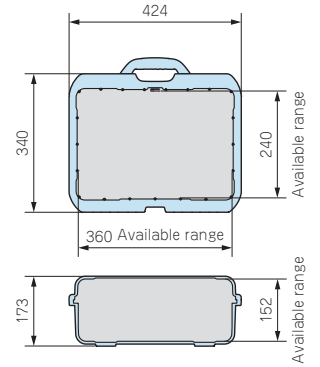
**NK/NKK 918**



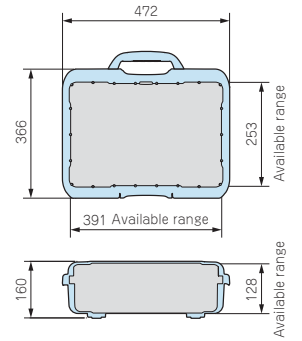
**NK • NKK dimensions**

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

**NK/NKK 920**



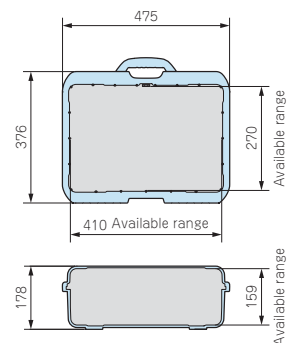
**NK/NKK 923 NEW**



**NK/NKK 925**



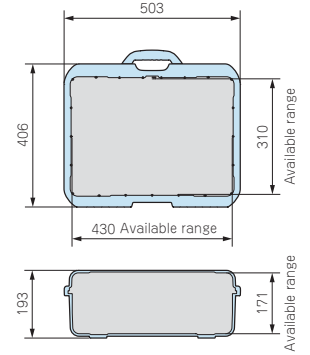
**APPLICATION EXAMPLE**  
ELECTRIC PROSPECTING / LOGGING DEVICE  
Product by OYO CORPORATION (Japan)



NK • NKK dimensions

DXF/DWG/PDF drawings available on our website.

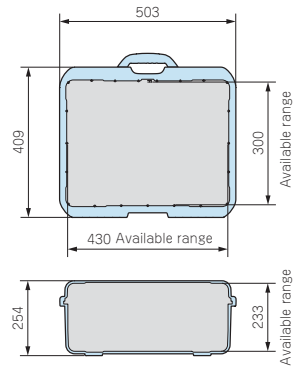
## NK/NKK 930



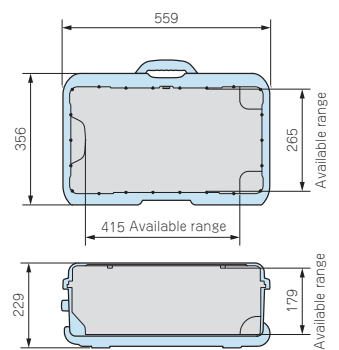
### APPLICATION EXAMPLE

PRESS BREAK CHECKER  
Product by Shinohara Press Service (Japan)

## NK/NKK 933



## NK/NKK 935

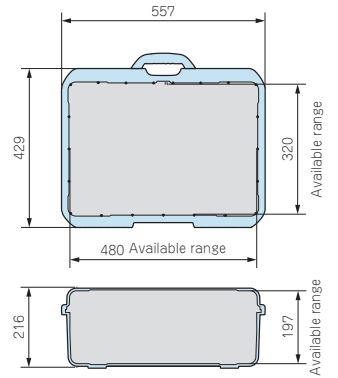


Equipped with a 2 stage retractable handle and polyurethane wheels.

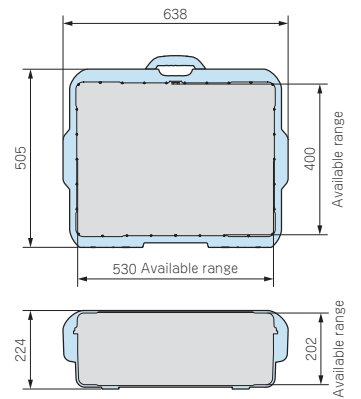
Cover can be detached by pulling out the hinge pin.  
※Hinge pin shape varies based by model type.



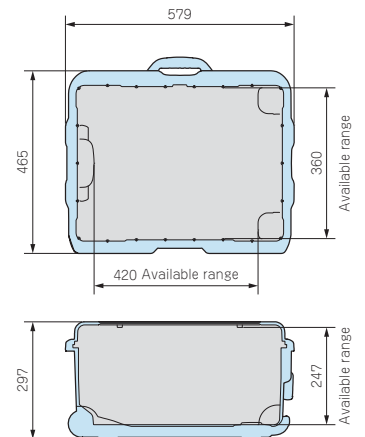
## NK/NKK 940



## NK/NKK 945



## NK/NKK 950



Equipped with a 2 stage retractable handle and polyurethane wheels.

NK • NKK dimensions

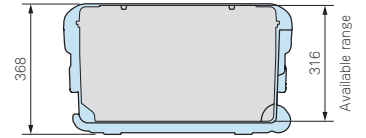
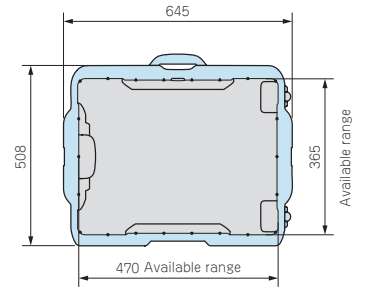
■ DXF/DWG/PDF drawings available on our website.

**NK/NKK 960**

※ ( ) values are for NK • NKK935 and 950 models.



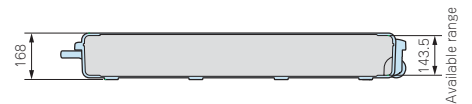
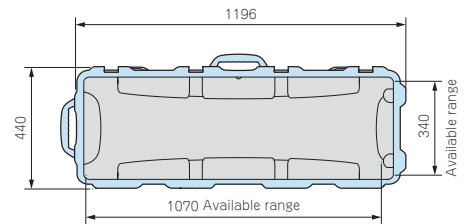
Equipped with a 2 stage retractable handle and polyurethane wheels.



**NKK 990**



Equipped with polyurethane wheels.



# NANO SERIES

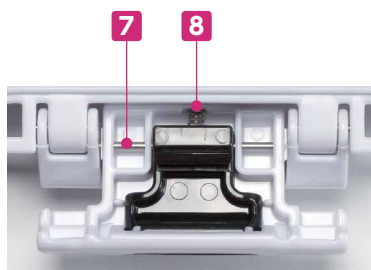
# WATERPROOF PORTABLE CASE



- IP65 waterproof compact and stylish case.
- Slit holes on both sides for strap or belt.
- Suitable for storing small electric devices such as mobile phones, wireless devices, portable radios, and so on.



Technical Data
Protection class : IP65
Operating temperature : -20°C~+60°C



Latch (lock mechanism) side



Hinge Side

### ● How To Use Strap



Insertion of clip into the case



Use as handy strap



Insert strap end into the loop after clip insertion.



Fix it to the belt loop, etc.

### Components

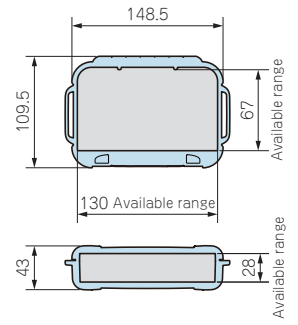
No.	Part name	Material
1	Cover · Base	Polycarbonate
2	Protective net	Silicone
3	Lock lever	Polycarbonate
4	Corner guard	Elastomer
5	Gasket	Elastomer
6	Strap	Nylon · Nylon 66
7	Latch pin	Stainless steel
8	Spring	Stainless steel
9	Pressure relief valve (※)	Nylon 66 · PTFE

※ Waterproof pressure relief valve enables pressure within the case to be equalized with the surrounding, allowing it to be opened with ease, while keeping it waterproof.

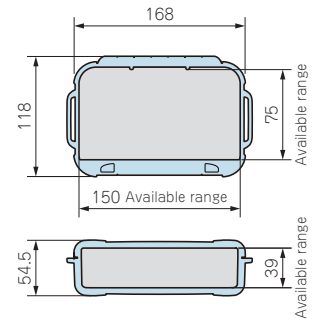
**NANO dimensions**

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

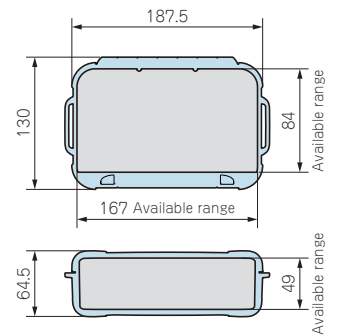
**NANO 310**



**NANO 320**



**NANO 330**



**Product no. / Dimensions**

Product no.					Dimensions (External)			Dimensions (Internal)			Weight (g)
● Black	● White	● Clear	● Lime	● Marine	W	D	H	w	d	h	
NANO310B	NANO310W	NANO310C	NANO310L	NANO310M	148.5	109.5	43	130	67	28	265
NANO320B	NANO320W	NANO320C	NANO320L	NANO320M	168	118	54.5	150	75	39	350
NANO330B	NANO330W	NANO330C	NANO330L	NANO330M	187.5	130	64.5	167	84	49	450

**Applicable for use as electronic and communication devices**

PCB can be installed with PCB mounting screw MT series.  
NANO series can also be used as a pole mounted communication device.



**Accessories(Optional parts)**



Aluminium panel NKAP series  
See page NKAP-1~NKAP-2



PCB mounting screw MT series  
See page NKAP-1



Nameplate sticker NKST series  
See page NANUK-ACC-3



**NKAP SERIES**

**ALUMINIUM PANEL for NANO · NK · NKK**

← NEW SIZE →



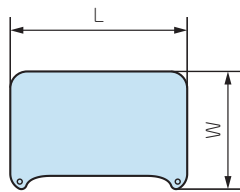
Optional aluminium panel can be used as a controller control / display, measuring device, transmitter, and so on.

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

**NKAP dimensions**

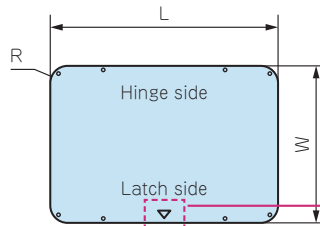
**NANO series**

Slide insert and screw fastening



**NK · NKK series**

Required screws vary based on size



※Install panel with ▽marking towards the latch.

**Components**

No.	Part name	Material
1	Panel	Aluminium (Anodized)
2	Screw	Stainless steel

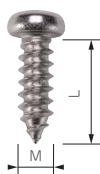


**Product no. / Dimensions**

Product no.	Suitable case	Thickness	L	W	R	▽ marking	Screw pcs	Weight (g)
NKAP310	NANO310	2	136.2	90.6	13	—	2	59
NKAP320	NANO320	2	156.8	100.4	15.7	—	2	75
NKAP330	NANO330	2	175.9	112.2	17	—	2	94
NKAP903	NK903	1.5	198.5	136.5	15	—	4	109
NKAP904	NK904	1.5	226	163.5	18	—	4	149
NKAP905	NK/NKK905	1.5	257	207	21.5	—	4	214
<b>NEW</b> NKAP908	NK/NKK908	1.5	250.9	200.1	18	—	4	203
<b>NEW</b> NKAP909	NK909	1.5	304.7	190.4	18	—	4	234
NKAP910	NK910 base side	2	346	244.5	17	—	4	452
NKAP910C	NK910 cover side	1.5	339.5	238	14	—	4	329
NKAP915	NK / NKK915	2	368.5	254	28	○	8	496
NKAP918	NK / NKK918	2	397.5	268.5	27	—	8	574
NKAP920	NK / NKK920	2	399.5	285	28	○	8	606
<b>NEW</b> NKAP923	NK / NKK923 base side	2	446.3	309.1	28	—	8	737
<b>NEW</b> NKAP923C	NK / NKK923 cover side	2	438.3	301.1	23.5	—	8	704
NKAP925	NK/NKK925	2	451.5	318	28	○	8	760
NKAP930	NK/NKK930	2	476	350.5	27	○	8	880
NKAP933	NK/NKK933	2	477.5	352	27	—	8	908
NKAP935	NK/NKK935	2	535	301.5	26.5	○	8	855
NKAP940	NK/NKK940	2	526.5	374	27	○	10	1,050
NKAP945	NK/NKK945	2	576.5	450	26.5	○	10	1,395
<b>NEW</b> NKAP950	NK/NKK950	2	540.8	409.1	27	—	10	1,179
<b>NEW</b> NKAP960	NK/NKK960	2	579.7	454.2	27	—	10	1,402

**MT SERIES**

**PCB MOUNTING SCREW for NANO**



PCB should be the same size as NKAP series aluminium panel.  
Insert PCB into groove (see diagram to the right) and screw into the screw marking.

**Product no. / Dimensions**

Product no.	M	L	Pcs
MT2.6-8T	2.6	8	2

Material : Stainless steel

# CUSTOMIZATION on ALUMINIUM PANEL

- Customization services such as CNC milling, punching press, digital inkjet printing, silkscreen printing, and engraving on NKAP panel are available.
- Custom colors can also be performed either through anodization, or painting.



- Self-clinching Standoff/Stud/Nut or Welded Fastener customization is available.



- An original control panel with machined aluminum panel and overlay sheet can be performed.



DVI SERIES

DIVIDER for NK · NKK

NEW SIZE

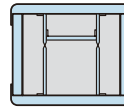


- Divider for organizing your components or equipment. Adjustable hook and loop fasteners allows for easily size adjustments.
- Padded dividers are designed to easily organize and protect your equipment.

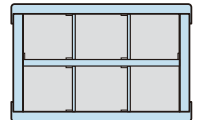
APPLICATION EXAMPLE



DVI905 / 908



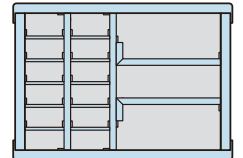
DVI915 / 918



DVI920



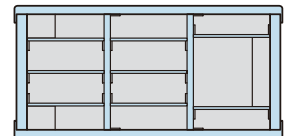
DVI923 / 925



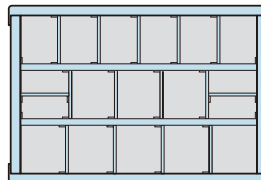
DVI930 / 933



DVI935



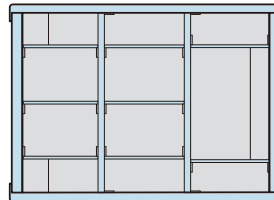
DVI940



DVI945

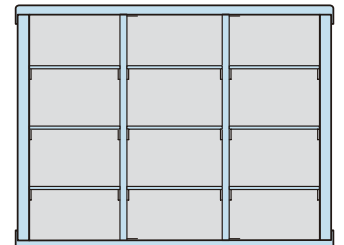


DVI950

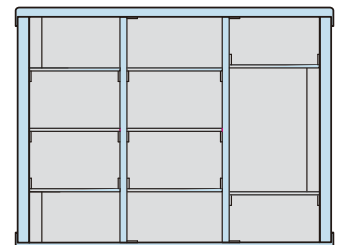


DVI960 ※2 divider layers available.

▼1st layer



▼2nd layer



Product no. / Suitable case

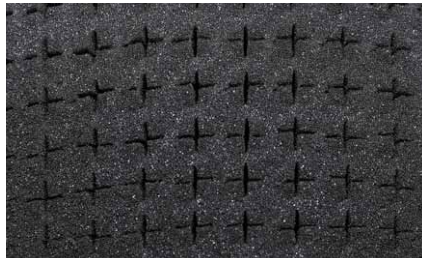
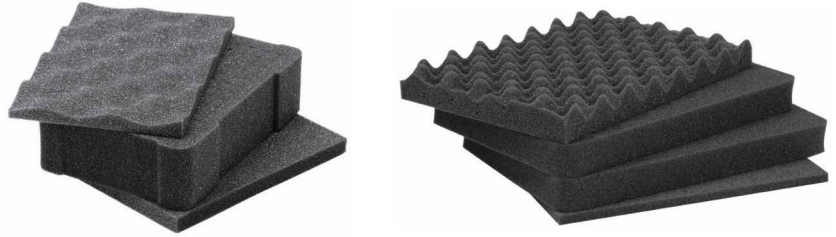
Product no.	Suitable case	Weight (g)
DVI905	NK/NKK905	288
<b>NEW</b> DVI908	NK/NKK908	453
DVI915	NK/NKK915	542
DVI918	NK/NKK918	800
DVI920	NK/NKK920	753
<b>NEW</b> DVI923	NK/NKK923	1,025
DVI925	NK/NKK925	968
DVI930	NK/NKK930	1,220
DVI933	NK/NKK933	1,500
DVI935	NK/NKK935	1,190
DVI940	NK/NKK940	1,695
DVI945	NK/NKK945	1,940
DVI950	NK/NKK950	1,810
DVI960	NK/NKK960	3,230

**NKSP** SERIES

**SPONGE FOAM for NK • NKK**

← NEW SIZE →

- Pre-cubed foam can be easily cut to make a suitable storage space.
- Available as three-layered foam set with waved (for cover side), pre-cubed foam (for base side) and base layer.
- ※ Pre-cubed foam layer is not available for NKSP990 model.



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

**Product no. / Suitable case**

Product no.	Suitable case	Foam layer details	Cut-line pitch	Weight (g)
NKSP903	NK903	Waved layer x 1 · Pre-cubed foam layer x 1 · Base layer x 1	12.7	40
NKSP904	NK904	Waved layer x 1 · Pre-cubed foam layer x 1 · Base layer x 1	12.7	70
NKSP905	NK/NKK905	Waved layer x 1 · Pre-cubed foam layer x 1 · Base layer x 1	12.7	120
<b>NEW</b> NKSP908	NK/NKK908	Waved layer x 1 · Pre-cubed foam layer x 2 · Base layer x 1	12.7	158
<b>NEW</b> NKSP909	NK909	Waved layer x 1 · Pre-cubed foam layer x 1 · Base layer x 1	12.7	158
NKSP910	NK910	Waved layer x 1 · Pre-cubed foam layer x 1 · Base layer x 1	12.7	150
NKSP915	NK/NKK915	Waved layer x 1 · Pre-cubed foam layer x 2 · Base layer x 1	12.7	250
NKSP918	NK/NKK918	Waved layer x 1 · Pre-cubed foam layer x 3 · Base layer x 1	12.7	390
NKSP920	NK/NKK920	Waved layer x 1 · Pre-cubed foam layer x 2 · Base layer x 1	12.7	320
<b>NEW</b> NKSP923	NK/NKK923	Waved layer x 1 · Pre-cubed foam layer x 2 · Base layer x 1	12.7	399
NKSP925	NK/NKK925	Waved layer x 1 · Pre-cubed foam layer x 2 · Base layer x 1	12.7	430
NKSP930	NK/NKK930	Waved layer x 1 · Pre-cubed foam layer x 2 · Base layer x 1	12.7	540
NKSP933	NK/NKK933	Waved layer x 1 · Pre-cubed foam layer x 3 · Base layer x 1	12.7	700
NKSP935	NK/NKK935	Waved layer x 1 · Pre-cubed foam layer x 2 · Base layer x 1	12.7	710
NKSP940	NK/NKK940	Waved layer x 1 · Pre-cubed foam layer x 2 · Base layer x 1	15	730
NKSP945	NK/NKK945	Waved layer x 1 · Pre-cubed foam layer x 2 · Base layer x 1	15	1,000
NKSP950	NK/NKK950	Waved layer x 1 · Pre-cubed foam layer x 3 · Base layer x 1	15	1,000
NKSP960	NK/NKK960	Waved layer x 1 · Pre-cubed foam layer x 4 · Base layer x 1	12.7	1,500
NKSP990	NKK990	Waved layer x 1 · Plain foam layer x 2 · Base layer x 1	—	1,490



**CUSTOMIZE**



- Customization on foam is available.
- Foam customization is also available where your own unique form design and cut-outs can be performed.

**CUSTOMIZED EXAMPLE**





**NSTP SERIES** SHOULDER STRAP

■ Nylon shoulder strap with polyurethane pads to reduce fatigue when carrying.



**Components**

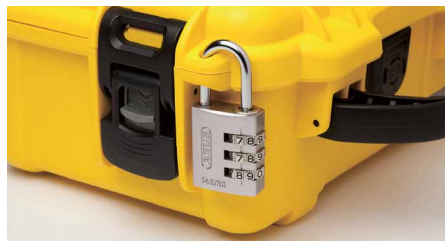
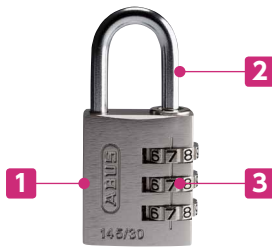
No.	Part name	Material
1	Belt	Nylon
2	Pad	Neoprene · Polyurethane
3	Hook	Steel (Black painted)

**Product no. / Feature**

Product no.	Weight (g)	Quantity
NSTP810	238	1

※Belt length can be adjustable from 810mm to 1,170mm  
 ※Not applicable for NK903, NK904, NKK990, NK · NKK950 and NK · NKK960 models.

**AB145S SERIES** PADLOCK



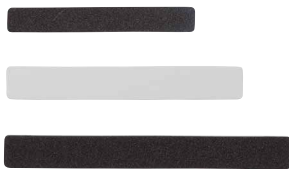
**Components**

No.	Part name	Material
1	Body	Aluminium
2	Shank	Steel
3	Dial	Zinc alloy

**Product no. / Feature**

Product no.	Weight (g)	Quantity
AB145S	52	1

**NKST SERIES** NAMEPLATE STICKER



Color nameplate can be performed by digital inkjet printing on a white plate.



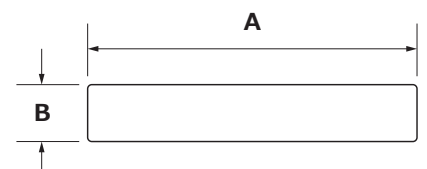
■ 0.3mm thick plastic nameplate with double sided tape on the back.

Custom name plate can be made with your company name, logo, product number or lot number with digital inkjet printing.

■ Digital inkjet print or silkscreen is possible from just 1 piece.

**Product no. / Dimensions**

Product no.		Suitable case	Dimensions		Quantity
● Black	● White		A	B	
NKST-1B	NKST-1W	NANO SERIES	50	6.8	1
NKST-2B	NKST-2W	NK903, 904	62.7	9.1	1
NKST-3B	NKST-3W	NK/NKK905 ~ 960	76.1	9.1	1



# UNIQUE COLOR AVAILABLE

## NANO SERIES

※See page NANO-1~NANO-2



Orange



Purple



Red

## NK SERIES

※See page NK-1~NK-2



Graphite



Orange



Olive



Silver  
Only available for  
NK903~920  
NK925~945 models



Lime  
Only available for  
NK903, 904, 905  
908 and 910 models



Blue  
Only available for  
NK903 and 904  
Models



Red  
Only available for  
NK903 and 904  
Models



●For NKK series, Olive color is only available for NKK990 model.

# Handy Carrying Case for Your Everyday Needs



**A wide selection to choose from with optional customization services available to suit various designs.**

Use as tools storage, precision parts, measurement devices, test samples, medical equipment, and so on.

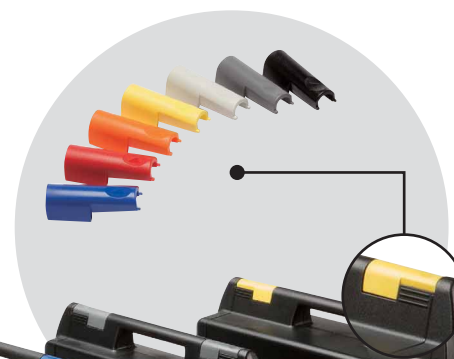


## SNAP-IN LATCH for easy handling

Equipped with a SNAP-IN LATCH for easy to open and close.

Best used at locations where storage of equipment are required.

SNAP-IN LATCH on MAXI series are available in 7 different colors: black, gray, marine, red, orange, yellow and light gray.





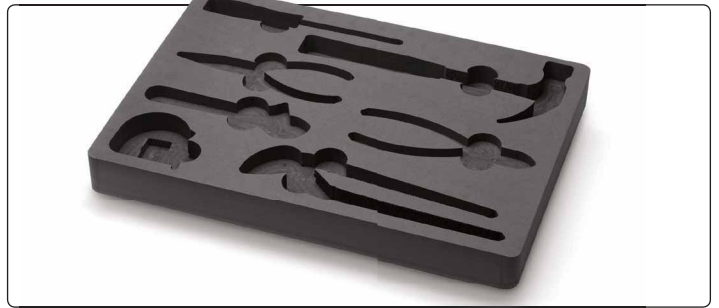
**TOTAL  
33 SIZES**

## Protective sponge foam

Optional foam comes with pre-cubed foam to allow for easy modification by removing the required squares. Foam customization is also available where your own unique form design and cut-outs can be performed.

MILLING

### ● CNC Foam Milling



CUSTOMIZE

## Digital inkjet printing with low initial tooling cost

Digital inkjet printing on tool cases with low initial tooling cost. Full color printing is possible with digital inkjet printing.

PRINTING





- Universal storing case with easy opening/closing snap-in latch.
- Available in 25 different sizes.
- Optional foam are available to protect your device or equipment.
- Suitable for storing tools, jigs, precision parts, measurement devices, test samples, medical equipment, and so on.

Technical Data
Operating temperature : -20°C~+60°C

## APPLICATION EXAMPLE



Light gray color is also available.

▶ See page SP-Custom-1~SP-Custom-2 for custom foam and custom inkjet printing.



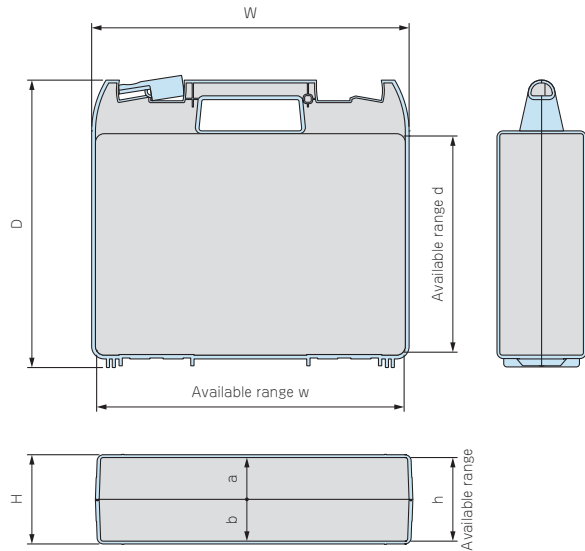
**Components**

No.	Part name	Material
1	Cover	ABS
2	Base	ABS
3	Snap-in latch	ABS
4	Hinge	PP

**MAXI dimensions**

■ Drawings below are reference examples only.

DXF/DWG/PDF drawings available on our website.



■ Red and black snap-in latches are included. You can exchange to your preferred color.

See page MAXI · XTRA-ACC-1 for how to exchange the snap-in latch.

● Red



● Black

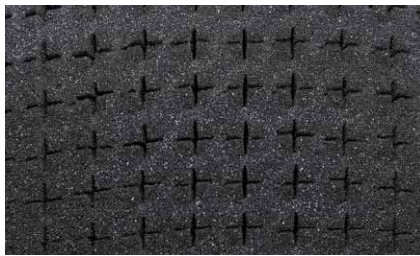


**Product no. / Dimensions**

Product no.	Dimensions (External)			Dimensions (Internal)					Weight (kg)
	W	D	H	w	d	h	a	b	
● Black									
MAXI 252307 B	254	230	72	242	169	66	33	33	0.4
MAXI 272408 B	271	241	84	258	180	78	39	39	0.5
MAXI 292610 B	289	256	97	276	194	91	45.5	45.5	0.6
MAXI 292612 B	289	256	117	276	192	111	45.5	65.5	0.65
MAXI 292614 B	289	256	137	274	192	131	65.5	65.5	0.68
MAXI 353106 B	345	308	61	333	242	54	27	27	0.78
MAXI 353107 B	345	308	72	333	242	65	27	38	0.8
MAXI 353108 B	345	308	83	332	242	76	38	38	0.8
MAXI 353111 B	345	308	112.5	328	238	105.5	27	78.5	0.9
MAXI 353112 B	345	308	123.5	328	238	116.5	38	78.5	1.0
MAXI 353116 B	345	308	164	328	238	157	78.5	78.5	1.2
MAXI 393309 B	390	334	88	377	267	80	40	40	1.0
MAXI 393310 B	390	334	103	377	265	95.5	40	55.5	1.1
MAXI 393312 B	390	334	118	377	265	111	55.5	55.5	1.1
MAXI 433614 B	432	363	138	412	290	131	65.5	65.5	1.5
MAXI 433617 B	432	363	174	408	286	166.5	101	65.5	1.6
MAXI 433621 B	432	363	210	408	286	202	101	101	1.74
MAXI 453809 B	452	383	89	438	314	81	40.5	40.5	1.3
MAXI 453811 B	452	383	109	436	312	101	40.5	60.5	1.4
MAXI 453813 B	452	383	129	436	312	121	60.5	60.5	1.5
MAXI 453814 B	452	383	144.5	432	308	136.5	40.5	96	1.6
MAXI 453816 B	452	383	164.5	432	308	156.5	60.5	96	1.7
MAXI 453820 B	452	383	200	432	308	192	96	96	1.8
MAXI 544517 B	539	450	169	516	365	162	81	81	2.4
MAXI 544521 B	539	450	205	516	362	197	81	116	2.7

**MASP** SERIES

**FOAM SET for MAXI**



- Pre-cubed polyurethane foam can be easily cut to make a suitable storage space.
- Available as a three-layered sponge foam set with waved (for cover side), pre-cubed foam (for base side) and base layer.
  
- DXF/DWG/PDF drawings available on our website.

**Product no. / Suitable case**

Product no.	Suitable case	Foam layer details	Cut-line pitch
MASP 252307	MAXI 252307 B	Waved layer x 1 • Pre-cubed foam layer x 1 • Base layer x 1	15mm
MASP 272408	MAXI 272408 B	Waved layer x 1 • Pre-cubed foam layer x 1 • Base layer x 1	15mm
MASP 292610	MAXI 292610 B	Waved layer x 1 • Pre-cubed foam layer x 1 • Base layer x 1	15mm
MASP 292612	MAXI 292612 B	Waved layer x 1 • Pre-cubed foam layer x 2 • Base layer x 1	15mm
MASP 292614	MAXI 292614 B	Waved layer x 1 • Pre-cubed foam layer x 2 • Base layer x 1	15mm
MASP 353106	MAXI 353106 B	Waved layer x 1 • Pre-cubed foam layer x 1 • Base layer x 1	15mm
MASP 353107	MAXI 353107 B	Waved layer x 1 • Pre-cubed foam layer x 1 • Base layer x 1	15mm
MASP 353108	MAXI 353108 B	Waved layer x 1 • Pre-cubed foam layer x 2 • Base layer x 1	15mm
MASP 353111	MAXI 353111 B	Waved layer x 1 • Pre-cubed foam layer x 2 • Base layer x 1	15mm
MASP 353112	MAXI 353112 B	Waved layer x 1 • Pre-cubed foam layer x 4 • Base layer x 1	15mm
MASP 353116	MAXI 353116 B	Waved layer x 1 • Pre-cubed foam layer x 1 • Base layer x 1	15mm
MASP 393309	MAXI 393309 B	Waved layer x 1 • Pre-cubed foam layer x 1 • Base layer x 1	15mm
MASP 393310	MAXI 393310 B	Waved layer x 1 • Pre-cubed foam layer x 1 • Base layer x 1	15mm
MASP 393312	MAXI 393312 B	Waved layer x 1 • Pre-cubed foam layer x 1 • Base layer x 1	15mm
MASP 433614	MAXI 433614 B	Waved layer x 1 • Pre-cubed foam layer x 2 • Base layer x 1	15mm
MASP 433617	MAXI 433617 B	Waved layer x 1 • Pre-cubed foam layer x 4 • Base layer x 1	15mm
MASP 433621	MAXI 433621 B	Waved layer x 1 • Pre-cubed foam layer x 1 • Base layer x 1	15mm
MASP 453809	MAXI 453809 B	Waved layer x 1 • Pre-cubed foam layer x 1 • Base layer x 1	20mm
MASP 453811	MAXI 453811 B	Waved layer x 1 • Pre-cubed foam layer x 1 • Base layer x 1	20mm
MASP 453813	MAXI 453813 B	Waved layer x 1 • Pre-cubed foam layer x 2 • Base layer x 1	20mm
MASP 453814	MAXI 453814 B	Waved layer x 1 • Pre-cubed foam layer x 2 • Base layer x 1	20mm
MASP 453816	MAXI 453816 B	Waved layer x 1 • Pre-cubed foam layer x 4 • Base layer x 1	20mm
MASP 453820	MAXI 453820 B	Waved layer x 1 • Pre-cubed foam layer x 2 • Base layer x 1	20mm
MASP 544517	MAXI 544517 B	Waved layer x 1 • Pre-cubed foam layer x 2 • Base layer x 1	20mm
MASP 544521	MAXI 544521 B	Waved layer x 1 • Pre-cubed foam layer x 3 • Base layer x 1	20mm



- Light weight and simple tool case.
- Optional foam available to protect your device or equipment.
- Suitable for storing test samples, tools, precision parts, and so on.
- Made from PP plastic, and available in light gray color.

Technical Data
Operating temperature : -20°C~+60°C

## APPLICATION EXAMPLE

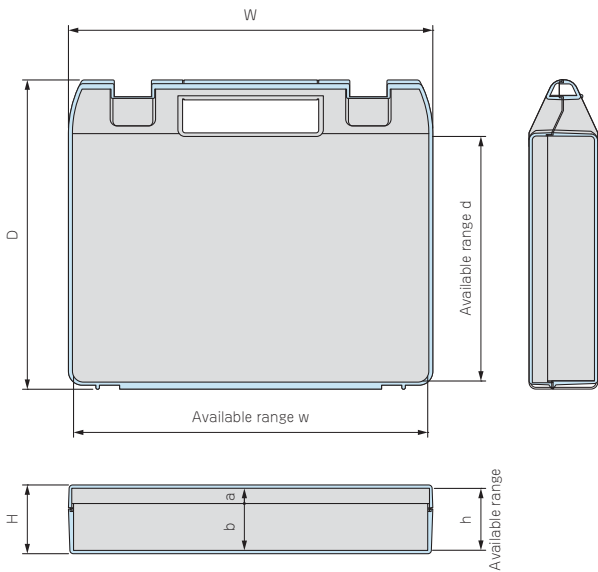


▶ See page SP-Custom-1~SP-Custom-2 for custom foam and custom inkjet printing.



**MINI dimensions**

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



**Product no. / Dimensions**

Product no.	Dimensions (External)			Dimensions (Internal)					Weight (g)
	W	D	H	w	d	h	a	b	
MINI 231905 G	230	187	45	222	140.5	40	9	31	230
MINI 272305 G	265	225	50	258	175	45	11	34	330
MINI 332806 G	327	275	55	319	225	49	13	36	470
MINI 352808 G	345	284	83	336	225	78	22.5	55.5	630

**Accessories (Optional parts)**

**MISP SERIES FOAM SET for MINI**



- Pre-cubed polyurethane foam can be easily cut to make a suitable storage space.
- Available as a three-layered foam set with waved (for cover side), pre-cubed foam (for base side) and base layer.
- DXF/DWG/PDF drawings available on our website.



**Product no. / Suitable case**

Product no.	Suitable case	Foam layer details
MISP 2319	MINI 231905 G	Waved layer x 1 · Pre-cubed foam layer x 1 · Base layer x 1
MISP 2723	MINI 272305 G	Waved layer x 1 · Pre-cubed foam layer x 1 · Base layer x 1
MISP 3328	MINI 332806 G	Waved layer x 1 · Pre-cubed foam layer x 1 · Base layer x 1
MISP 3528	MINI 352808 G	Waved layer x 1 · Pre-cubed foam layer x 1 · Base layer x 1

# XTRA SERIES

# PLASTIC CARRYING CASE



- Slim and rounded handle tool case.
- Optional foam are available to protect your device or equipment.
- Suitable for storing measuring devices, test samples, tools, precision parts, and so on.

Technical Data
Operating temperature : -20°C~+60°C

## APPLICATION EXAMPLE



### Components

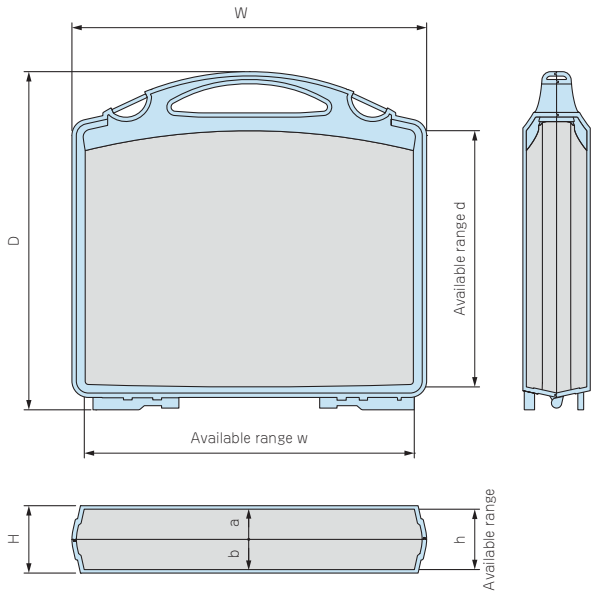
No.	Part name	Material
1	Cover	PP or ABS
2	Base	PP or ABS
3	Latch	PP

※ABS material is used for the Cover and Base of XTRA494614B/G models.

▶ See page SP-Custom-1~SP-Custom-2 for custom foam and custom inkjet printing.

**XTRA dimensions**

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



**Product no. / Dimensions**

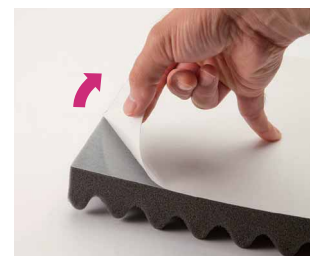
Product no.		Dimensions (External)			Dimensions (Internal)					Weight (kg)
● Black	● Light gray	W	D	H	w	d	h	a	b	
XTRA 262505 B	XTRA 262505 G	258	246	49	240	188	42	21	21	0.4
XTRA 323108 B	XTRA 323108 G	320	308	81	296	230	76	38	38	0.6
XTRA 403810 B	XTRA 403810 G	397	377	96	368	290	90	45	45	0.9
XTRA 494614 B	XTRA 494614 G	486	460	136	450	355	131	65.5	65.5	1.66

**Accessories (Optional parts)**

**XTSP SERIES FOAM SET for MINI**



- Pre-cubed polyurethane foam can be easily cut to make a suitable storage space.
- Available as a three-layered foam set with waved (for cover side), Pre-cubed foam (for base side) and base layer.
- DXF/DWG/PDF drawings available on our website.



**Product no. / Suitable case**

Product no.	Suitable case	Foam layer details	Cut-line pitch
XTSP 2625	XTRA 262505 B/G	Waved layer x 1 · Pre-cubed foam layer x 1 · Base layer x 1	15mm
XTSP 3231	XTRA 323108 B/G	Waved layer x 1 · Pre-cubed foam layer x 1 · Base layer x 1	15mm
XTSP 4038	XTRA 403810 B/G	Waved layer x 1 · Pre-cubed foam layer x 1 · Base layer x 1	15mm
XTSP 4946	XTRA 494614 B/G	Waved layer x 1 · Pre-cubed foam layer x 1 · Base layer x 1	20mm

Both waved and base layer has a double-sided tape attached on the back side. Peel off to adhere onto the inner side of the case.

**HSTP** SERIES

**SHOULDER STRAP**



**Product no. / Feature**

Product no.	Weight (g)	Quantity
HSTP1000	129	1

- Hole milling is required on the case for shoulder strap installation.
- Recommended hole for installation is  $\phi 6.2\text{mm}$ .

**ML** SERIES

**COLOR LATCH for MAXI**

- Replacement latch for MAXI case.



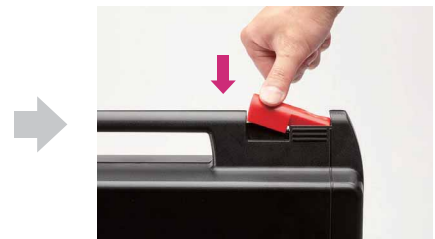
**How to remove latch**

Hold the case and pull the latch.



**How to install latch**

Hold the case, insert thinner side first, and push the opposite side in.

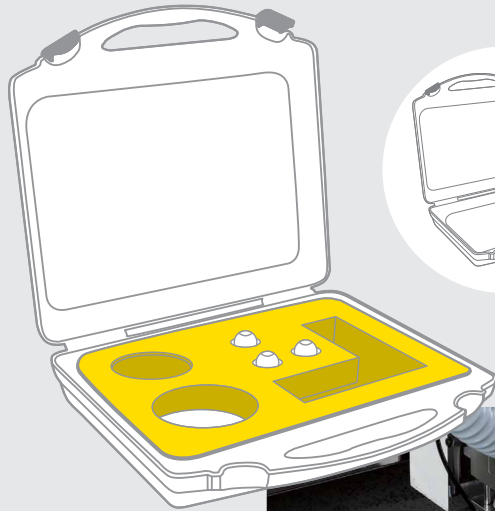


**Product no. / Suitable case**

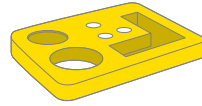
Product no.							Suitable case	Quantity
● Black	● Marine	● Yellow	● Orange	● Red	● Light gray	● Gray		
ML-SB	ML-SM	ML-SY	ML-SO	ML-SR	ML-SL	ML-SG	MAXI 252307 B ~ MAXI 292614 B	2
ML-LB	ML-LM	ML-LY	ML-LO	ML-LR	ML-LL	ML-LG	MAXI 353106 B ~ MAXI 544521 B	2

# CNC Foam Milling

Customize based on how you want it to be!



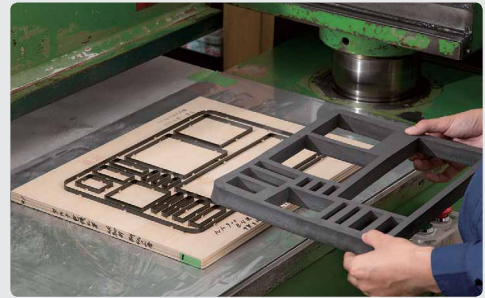
+



+



CNC foam cutting machine enables quick and cost-effective hole milling service.



For mass production, cost-effective mold press cutting is also available.

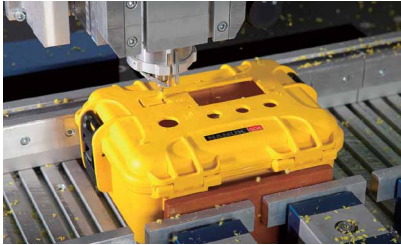
## APPLICATION EXAMPLE



# CNC Machining • Printing Service for Case

## CNC Machining

■ CNC machining for your switch, connector, display and so on is possible from just 1 piece.



## Printing Service

■ Digital inkjet printing, silkscreen printing and nameplate sticker printing is possible from just 1 piece.

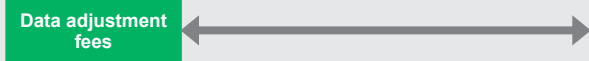
Low initial cost  
No plate processing fee

### Inkjet printing

Low printing cost for small quantities.

● Data adjustment fees may be charged again if significant changes are required on your repeat order.

● If the data in recommended format is provided



● Data or images other than recommended formats



### Silk-screen initial tooling

Low printing cost for large quantity single color print.



### Recommended data formats

PDF (.pdf -100%)		Vector file (.ai)		EPS (.eps)	
---------------------	--	----------------------	--	---------------	--

Initial cost can be reduced with the recommended formats.



Able to Inkjet print on rigid urethane foam.

## APPLICATION EXAMPLE

