

IP67 WEARABLE ENCLOSURE

A stylish design enclosure with wrist strap,
perfect solution for wearable devices.

SMW series



**Stylish and luxurious mirror
finish enclosure body**



**Water-repellent comfortable
silicone wrist strap**



High water resistance of IP67 withstands submersion in 1m depth for 30 minutes.

Degradation resistant silicone gasket for long-lasting performance.



Tabbed battery and coin battery holder can be installed.



For various wearable IoT devices

Suitable for small IoT devices including LoRaWAN and Sigfox, detectors, RFID tags, GPS terminals and others.

Environmental sensor



Access control system



GPS tracker



Emergency alert system



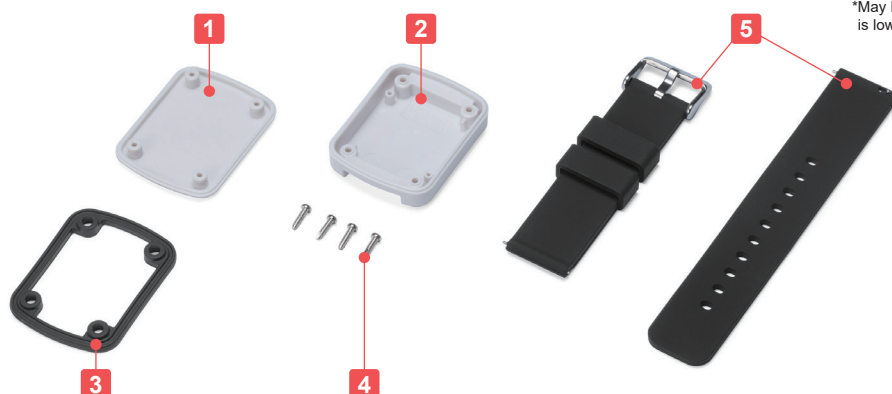


- Wearable enclosure with IP67 waterproof rating (30min / 1m-depth).
- Off-white models are made of weather-resistant ASA material. Suitable for devices intended to be used under direct sunlight.
- Stylish and easy-to-wear design that suits any situations.
- Suitable for detectors, GPS terminals, RFID devices, small IoT devices and others.

Technical Data

Protection class : IP67 (30min / 1m-depth)
 Operating temperature
 Black (ABS) : -10°C ~ +60°C
 Off-white (ASA) : -30°C ~ +60°C
 Recommended torque : SMW-46□ : 0.2N • m
 SMW-50□ : 0.35N • m

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



Components

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS (UL94HB)	Black / Polished
			ASA (UL94HB)	Off-white / Polished
2	Bottom cover	1	ABS (UL94HB)	Black / Polished
			ASA (UL94HB)	Off-white / Polished
3	Gasket	1	Silicon	Black
4	Tapping screw	4	Stainless steel	Unfinished
5	Wrist strap	1	Silicon • Stainless steel	Black • Polished

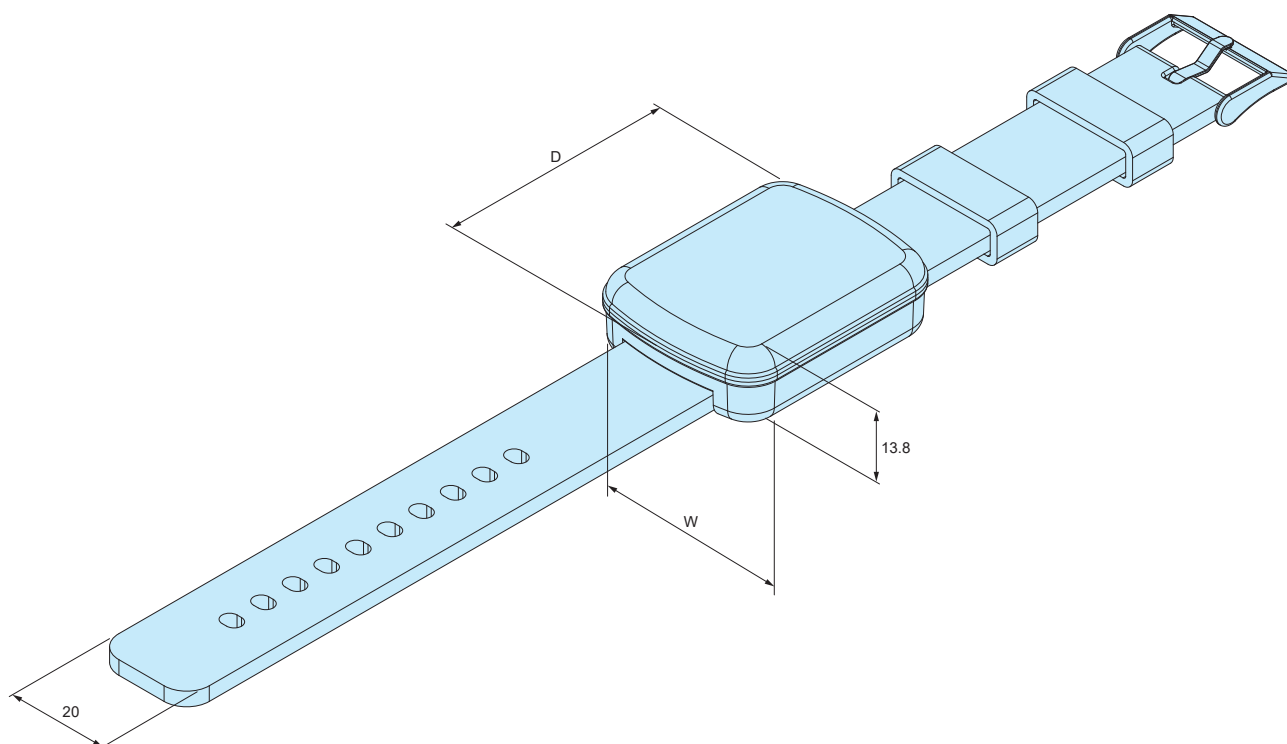
Accessories (Optional parts)



PCB mounting screw
EM-1.6
See page 398

SMW dimensions

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



Product no. / Details

Product no.		External dimensions		Weight (g)
● Black	● Off-white	W	D	
SMW-46B	SMW-46W	36	46	28
SMW-50B	SMW-50W	44	50	30.5

Accessories (Optional parts) – COIN CELL BATTERY HOLDERS



- Various coin cell battery holders can be stored.
See coin cell battery holders on our website for more details.
- Chart on the right is based upon mounting onto a 1.0mm thick PCB and attached to the top cover.
- Please note that depending on the mounting location, PCB may not be able to be properly affixed on.

COMPATIBLE COIN CELL BATTERY HOLDERS CHART

Product no.	Compatible coin cell battery holders
SMW-46□	PB621 BK-879 • 2032M BS-M-1225 • BS-S-1225 • SMTM1632
SMW-50□	PB621 BK-879 • 5067 • 2430SM • 2032M BS-M-1225 • BS-S-1225 • SMTM1632 • 2032

NEW COMPACT PLASTIC CASE for NEXT GENERATION IoT

Stylish and elegant plastic case for use with all your IoT related devices

SIC•SIM series



Sleek & Glossy Finish High Performance Case



Multipurpose & Wall Mount Models Available

Multipurpose Model
SIC series



Wall Mount Model
SIM series



COMPACT PLASTIC CASE for IoT DEVICES

SIC • SIM series are snap-in type compact-sized plastic case without screws.

Despite the small size, ample internal space is achieved by a snap-in assembly construction.

A rounded design yet having flat surfaces enables easy customization such as hole milling or printing.

Ideal for small IoT appliances such as LoRa WAN or Sigfox power-saving communication devices, RFID or GPS gadgets, or network sensors.

Wall Mount Communication Network Device



RFID Reader



Remote Controller

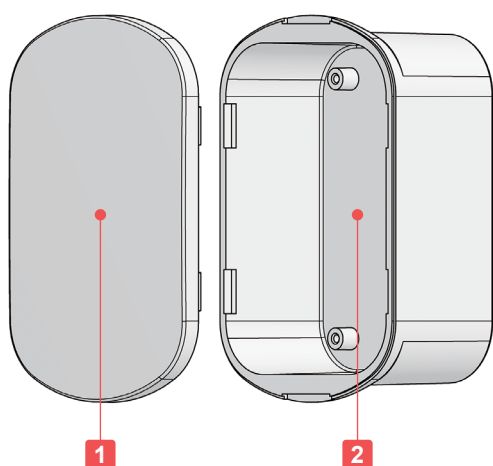


Security Sensor



USB Data Logger





Technical Data

Protection class : IP40
 Operating temperature
 Black (ABS) : -10°C ~ +60°C
 Off-white (ASA) : -30°C ~ +60°C

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

- 8 new sizes added for a total of 19 different sizes available for selection.
- Small rounded design plastic case ideal for use as IoT devices.
- Easy and tool-less assembly snap-in case.
- While being small in size, there is ample internal space by utilization of the snap-in structure.
- The polished surface also provides a high-end finish and gives off a superior quality and feel while having superb cost performance.
- Off-white models are made of weather-resistant ASA material. Suitable for devices intended to be used under direct sunlight.
- Optional universal PCB, PCB32-53 is compatible with SIC5-7-2 and 5-7-3 models. See PCB series on our website for more details.

Components

No.	Part name	Pcs	Material	Color / Finish
1	Cover	1	ABS UL94HB	Black / Polished
			Weather-resistant ASA UL94HB	Off-white / Polished
2	Base	1	ABS UL94HB	Black / Polished
			Weather-resistant ASA UL94HB	Off-white / Polished

Accessories (Optional parts)



Rubber strain relief cord protector
 CBS series
 See page 385

Double-sided mounting tape DST series
 See page 393

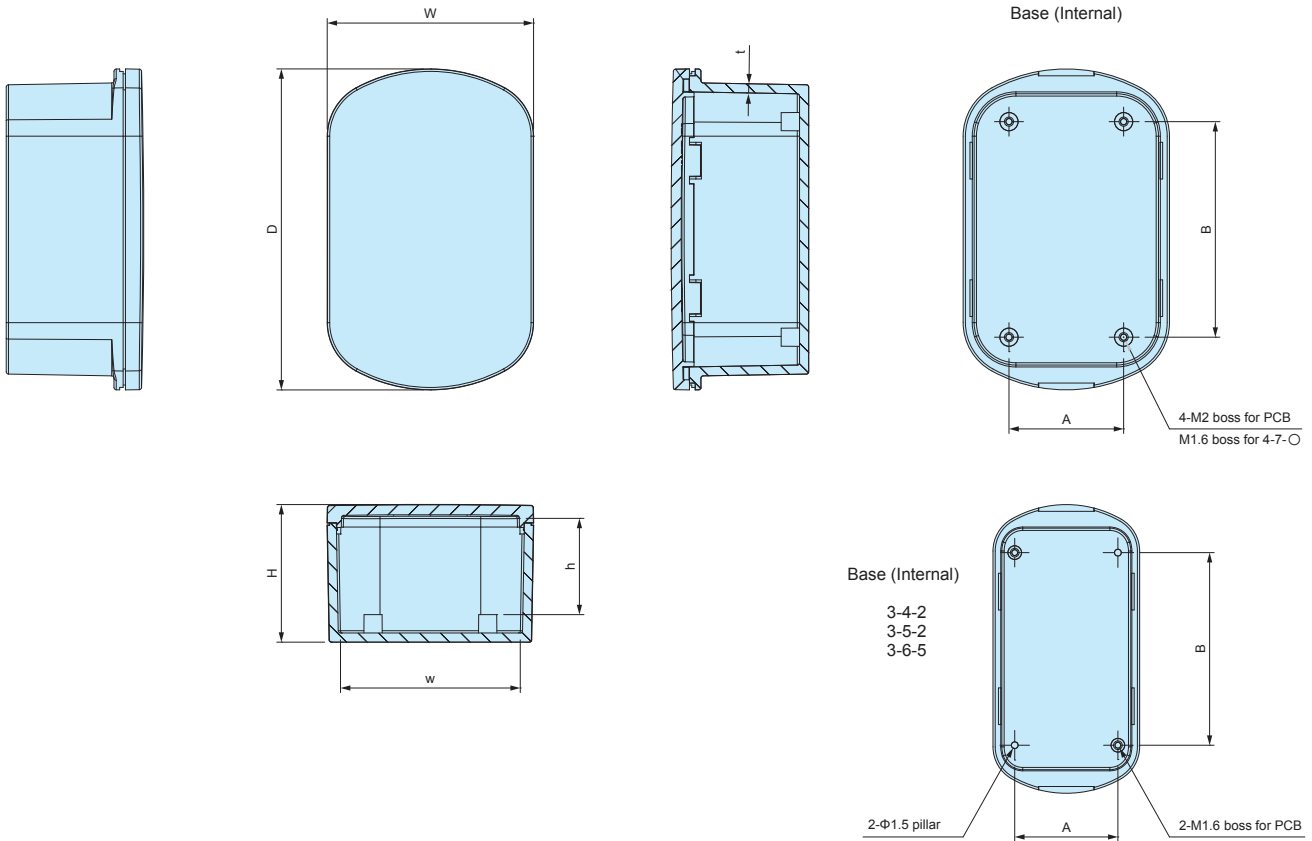
Neodymium magnet NMG series
 See page 392

PCB mounting screw EM-2
 See page 398

Universal PCB PCB series
 See website

SIC dimensions

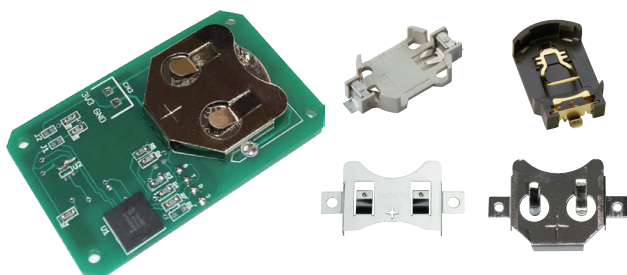
■ DXF/DWG/PDF/STP drawings available on our website.



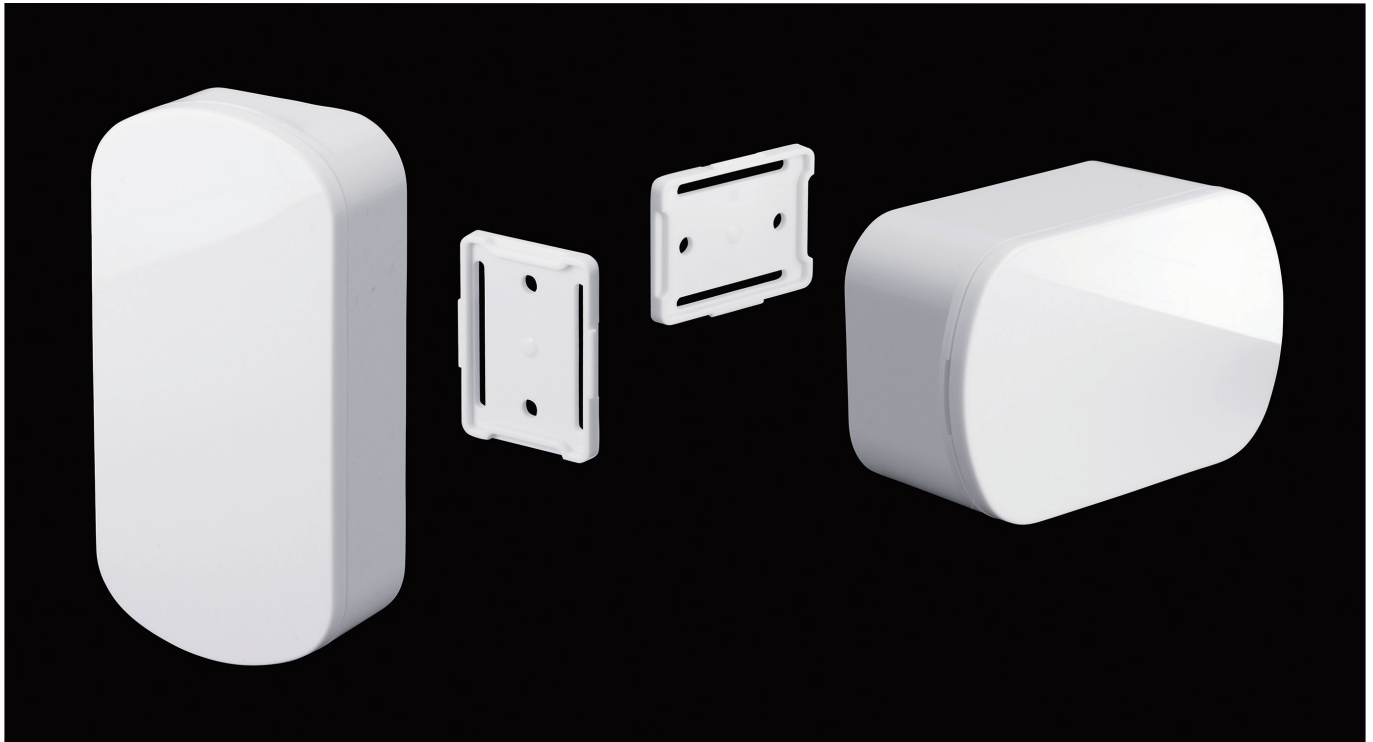
Product no. / Details

Product no.		External dimensions			Internal dimensions			Boss pitch		t	Weight (g)
● Black	● Off-white	W	D	H	w	d	h	A	B		
NEW SIC2- 4-1B	NEW SIC2- 4-1W	20	35	13	15.3	23.6	8.7	—	—	1.7	4.4
NEW SIC2- 5-1B	NEW SIC2- 5-1W	20	50	13	15.3	38.6	8.6	—	—	1.7	6.2
SIC3- 4-2B	SIC3- 4-2W	30	40	18	25.1	28.6	11.1	16.5	24	1.7	7.8
SIC3- 5-2B	SIC3- 5-2W	25	54	18	20.1	42.6	11.1	15.5	35	1.7	9.2
SIC3- 6-2B	SIC3- 6-2W	32	63	20	27.1	51.6	13	22.5	42	1.7	13.2
SIC4- 7-1B	SIC4- 7-1W	38	65	14	32.7	53.3	6.4	24	45.5	2	14.8
SIC4- 7-2B	SIC4- 7-2W	38	65	22	32.4	53	14.4	24	45.5	2	17.7
SIC5- 5-2B	SIC5- 5-2W	45	50	20	39.5	38.5	10.9	25	27	2	14.9
SIC5- 5-3B	SIC5- 5-3W	45	50	30	39.1	38.1	20.9	25	27	2	18.1
SIC5- 7-2B	SIC5- 7-2W	45	70	20	39.5	58.5	10.9	25	47	2	20.1
SIC5- 7-3B	SIC5- 7-3W	45	70	30	39.1	58.1	20.9	25	47	2	24.1
SIC5- 9-2B	SIC5- 9-2W	45	90	20	39.5	78.5	10.9	25	67	2	24.9
SIC5- 9-3B	SIC5- 9-3W	45	90	30	39.1	78.1	20.9	25	67	2	29.4
NEW SIC6- 7-3B	NEW SIC6- 7-3W	60	65	25	54.3	53.6	15.9	40	40	2	26.8
NEW SIC6- 7-4B	NEW SIC6- 7-4W	60	65	38	53.9	53.1	28.9	40	40	2	32.6
NEW SIC6- 9-3B	NEW SIC6- 9-3W	60	90	25	54.3	78.6	15.9	40	65	2	36.3
NEW SIC6- 9-4B	NEW SIC6- 9-4W	60	90	38	53.9	78.1	28.9	40	65	2	43.6
NEW SIC6-12-3B	NEW SIC6-12-3W	60	120	25	54.3	108.6	15.9	40	95	2	46.9
NEW SIC6-12-4B	NEW SIC6-12-4W	60	120	38	53.9	108.1	28.9	40	95	2	55.9

Accessories (Optional parts) COIN CELL BATTERY HOLDERS



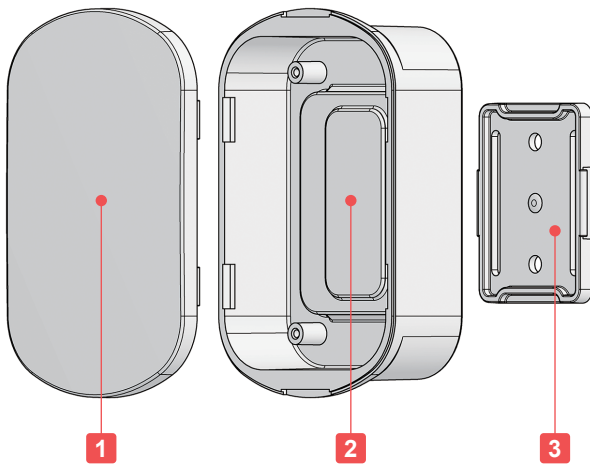
- Various coin cell battery holders can be utilized.
See coin cell battery holders on our website for more details.
- Please note that depending on the mounting location, PCB may not be able to be properly affixed on.



Technical Data

Protection class: IP40
Operating temperature: -30°C ~ +60°C

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

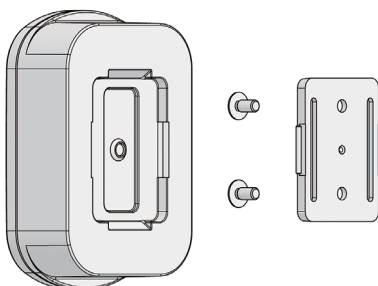


- 6 new sizes added for a total of 14 different sizes available for selection.
- Small rounded design plastic case ideal for use as IoT devices.
- Easily attached to, or detached from the wall by using the wall mounting bracket.
- Made of weather-resistant ASA material.
Suitable for devices intended to be used under direct sunlight.
- Optional universal PCB, PCB32-53 is compatible with SIM5-7-2 and 5-7-3 models. See PCB series on our website for more details.

Components

No.	Part name	Pcs	Material	Color / Finish
1	Cover	1	Weather-resistant ASA UL94HB	Off-white / Polished
2	Base	1	Weather-resistant ASA UL94HB	Off-white / Polished
3	Wall mounting bracket	1	Weather-resistant ASA UL94HB	Off-white / Polished

Bracket installation



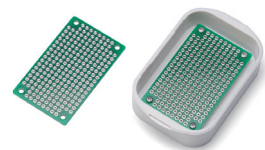
Accessories (Optional parts)



Rubber strain relief cord protector
CBS series
See page 385



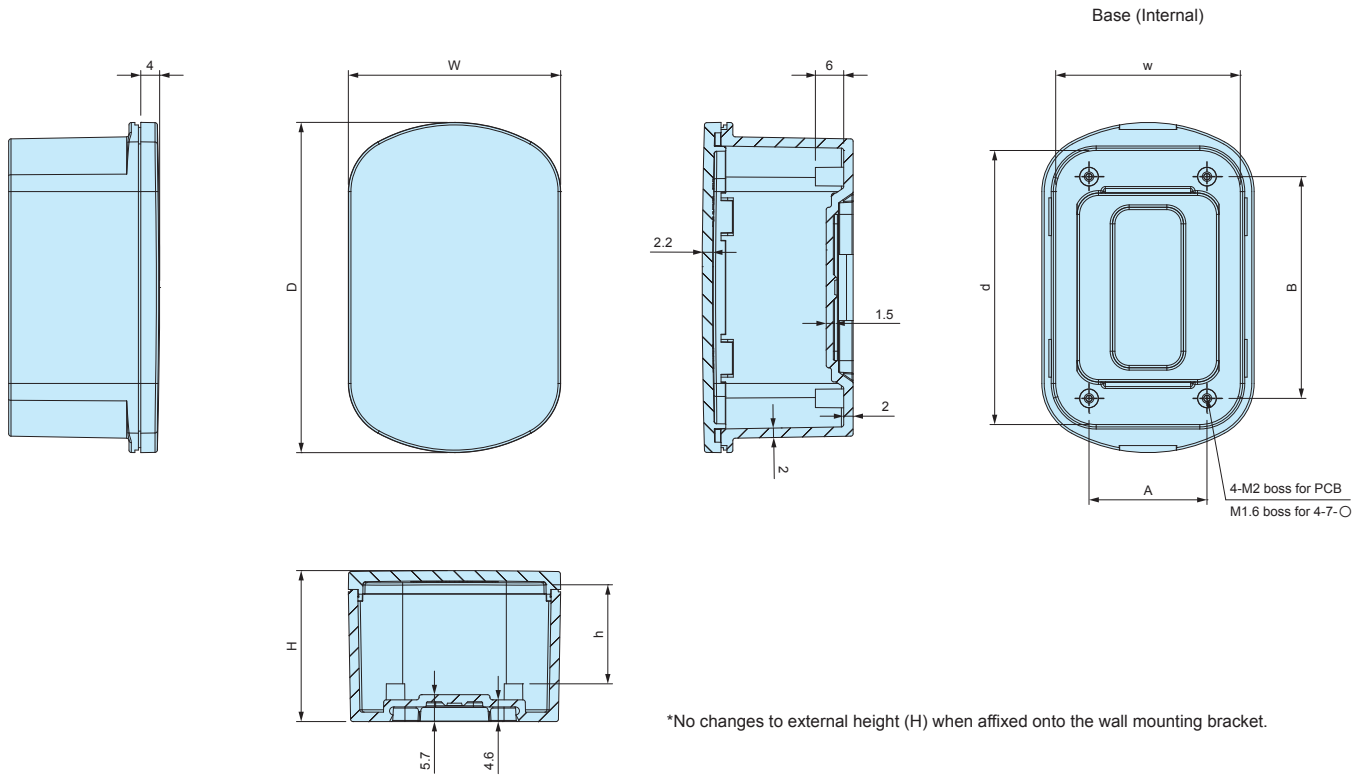
PCB mounting screw EM-2
See page 398



Universal PCB PCB series
See website

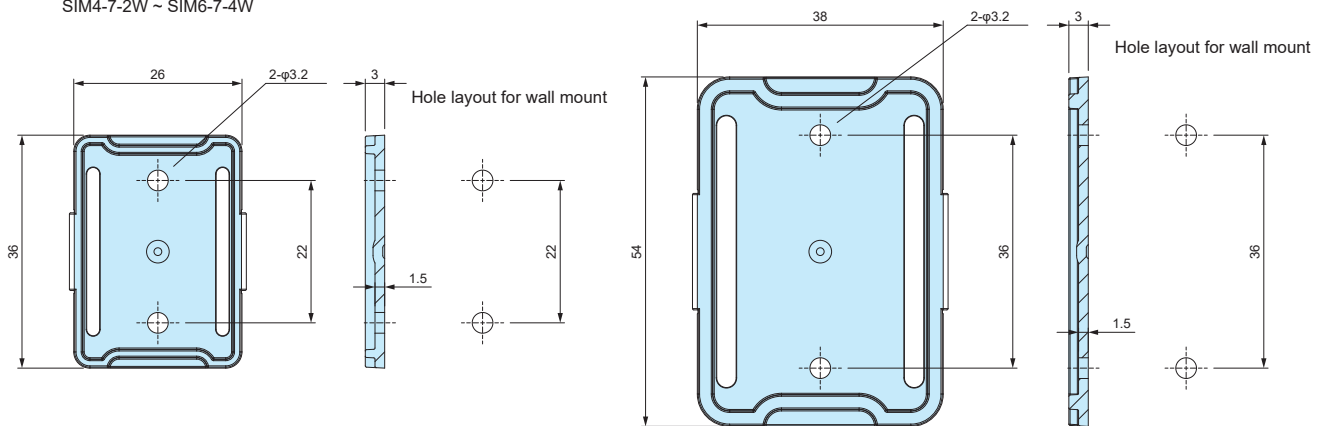
SIM dimensions

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



SIM6-9-3W ~ SIM6-12-4W

SIM4-7-2W ~ SIM6-7-4W



■ M3 screws for installation of bracket on walls are not included.

Product no. / Details

Product no.	External dimensions			Internal dimensions			Boss pitch		Weight (g)
	W	D	H	w	d	h	A	B	
SIM4- 7-2W	38	65	17	32.7	53.2	6.4	24	45.5	17.8
SIM4- 7-3W	38	65	25	32.4	52.9	14.4	24	45.5	20.7
SIM5- 5-2W	45	50	23	39.4	38.5	10.9	25	27	17.8
SIM5- 5-3W	45	50	33	39	38.1	20.9	25	27	20.9
SIM5- 7-2W	45	70	22	39.4	58.4	10.9	25	47	22.8
SIM5- 7-3W	45	70	32	39.1	58	20.9	25	47	25.9
SIM5- 9-2W	45	90	22	39.4	78.4	10.9	25	67	27.7
SIM5- 9-3W	45	90	32	39.1	78	20.9	25	67	32.3
NEW SIM6- 7-3W	60	65	27	54.2	53.5	15.9	40	40	29.3
NEW SIM6- 7-4W	60	65	40	53.8	53	28.9	40	40	34.9
NEW SIM6- 9-3W	60	90	27	54.2	78.5	15.9	40	65	40.9
NEW SIM6- 9-4W	60	90	40	53.8	78	28.9	40	65	47.9
NEW SIM6-12-3W	60	120	27	54.2	108.5	15.9	40	95	53.1
NEW SIM6-12-4W	60	120	40	53.8	108	28.9	40	95	62.1

CBS series**RUBBER STRAIN RELIEF CORD PROTECTOR****Application example**

Installed onto SIC series

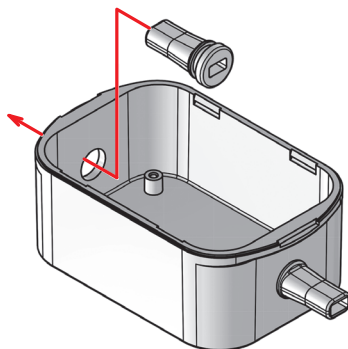


Installed onto EX series

- A total of 8 different sizes available for selection.
- Strain relief cord protector helps relieve flex stress and prevents damage to cables.
※ Does not prevent cables from being dislodged.
- 2 types - round and flat - are available.
- Insert from the inner side of the case / panel of the enclosure.
- Made from high heat resistant silicone material.

Technical Data

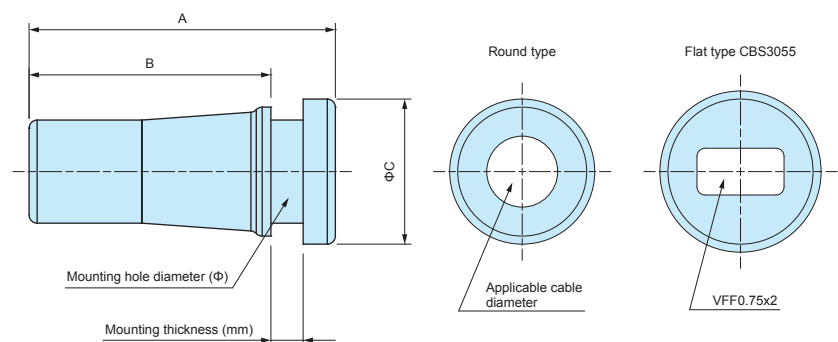
Operating temperature:
-40°C ~ +100°C

Installation steps

- ① Insert into the mounting hole from the inside.
 - ② Thread the cable through the protector.
- ※ Protector must be installed first.

CBS dimensions

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

**Product no. / Details**

Product no.		A	B	C	Applicable cable diameter / type	Mounting hole diameter (Φ)	Mounting thickness (mm)	Material	Pack of
● Black	● Off-white								
CBS3055-15B	CBS3055-15W	18.5	15	10	VFF0.75x2	7.6 ~ 7.8	1.5 ~ 2.0	Silicone	10
CBS3055-20B	CBS3055-20W	19	15	10	VFF0.75x2	7.6 ~ 7.8	2.0 ~ 2.5	Silicone	10
CBS35-15B	CBS35-15W	16.5	13	8	Φ3.5	5.6 ~ 5.8	1.5 ~ 2.0	Silicone	10
CBS35-20B	CBS35-20W	17	13	8	Φ3.5	5.6 ~ 5.8	2.0 ~ 2.5	Silicone	10
CBS45-15B	CBS45-15W	18.5	15	9	Φ4.5	6.6 ~ 6.8	1.5 ~ 2.0	Silicone	10
CBS45-20B	CBS45-20W	19	15	9	Φ4.5	6.6 ~ 6.8	2.0 ~ 2.5	Silicone	10
CBS60-15B	CBS60-15W	20.5	17	10.5	Φ6.0	8.1 ~ 8.3	1.5 ~ 2.0	Silicone	10
CBS60-20B	CBS60-20W	21	17	10.5	Φ6.0	8.1 ~ 8.3	2.0 ~ 2.5	Silicone	10

DST series**DOUBLE-SIDED MOUNTING TAPE**

- Super strong double-sided mounting tape with excellent cold and heat resistance.
- Allow cases to be attached onto any place.
- Easily attached onto walls where holes cannot be drilled.
- Can be used with a range of products, such as small IoT type enclosures.

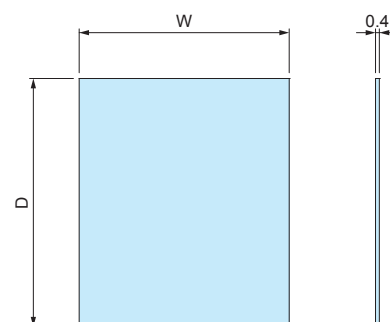
- Please ensure that surface is cleaned and grease-free before adhering.
- Once removed, it cannot be adhered on again.

Notes:

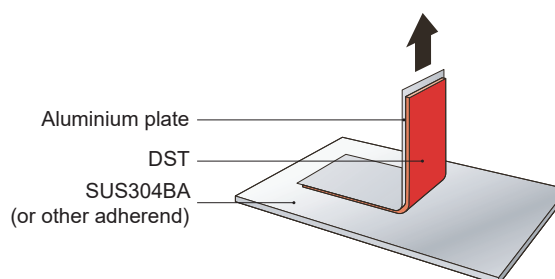
Due to the strong adhesive strength,
do ensure that the surface or product is suitable to be adhered onto.

Technical Data

Operating temperature:
-30°C ~ +200°C

**Adhesion Performance (90° peel adhesion)**

90° direction peel force N/cm	Stainless steel (SUS304BA)	24
	Aluminium (A1050P)	21
	Bonded steel plate (SECC)	30
	ABS	10
	Acrylic (PMMA)	16
	Polypropylene	6
	Polyethylene (HDPE)	3
	Glass	27

**[Test Method]**

Backed with specially treated Aluminium foil (130 μ m), crimped with a 10kg steel roller back and forth twice, cured at room temperature for 72 hours, tensile speed 300mm/min.

*Data values listed are test results based on the test conditions, and are to be used as reference only.

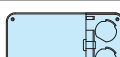
*Adhesive strength and other physical properties vary depending on the adherend, bonding and curing conditions, and other factors.

Product no. / Details

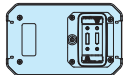
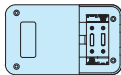
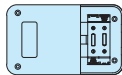
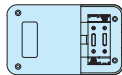
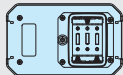
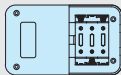
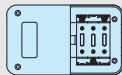
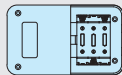
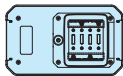
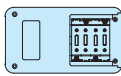
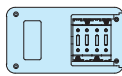
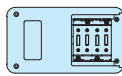
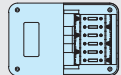
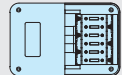
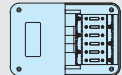
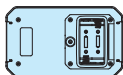
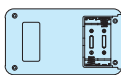
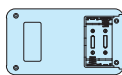
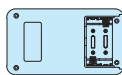
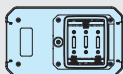
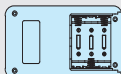
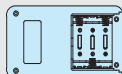
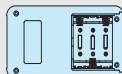
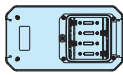
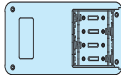
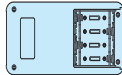
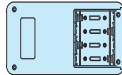
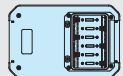
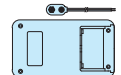
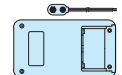
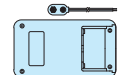
■ Material / Color: Acrylic foam base, acrylic adhesive / gray

Product no.	W	D	Suitable models	Weight (g)	Pack of
NEW DST14-22	14	22	SIC2-4-1 SW-30	0.3 / pc	5
NEW DST14-36	14	36	SIC2-5-1	0.4 / pc	5
DST18-40	18	40	SIC3-5-2 SW-(T)40 • 60	0.7 / pc	5
DST22-26	22	26	SIC3-4-2 SW-(T)40	0.5 / pc	5
DST24-48	24	48	SIC3-6-2 SW-50 • 53 • (N)(T)55 • (N)65 TW/TWN4-2-5 • 4-2-6 • 4-2-8	0.8 / pc	5

BUILT-IN BATTERY COMPARTMENT MODEL CHART

Series Battery Compartment	WC series Page 29 ~ 32	CS series Page 19 ~ 20	CSS series Page 17 ~ 18
			
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)
CR2450 / CR2477 x1	 WC100-20-R (49×20.5×100)	 CS100 (50×16.8×100)	 CSS100 (54.1×20.8×104.1)
AAA x 2	 WC105-28-F2 (50.5×28.2×105)		
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 Page 39 ~ 40	LC series Page 53 ~ 54	LCS series Page 49 ~ 52	LCT series Page 45 ~ 48
			
 WH125-20-F2 (79×20×126) WH125-28-F2 (79×28×126)	 LC115-F2 (69×19.5×115) LC115H-F2 (69×28×115)	 LCS115-F2 (74×24×120) LCS115H-F2 (74×32.5×120)	 LCT115-F2 (76×28×121.9) LCT115H-F2 (76×36.5×121.9)
 WH125-20-F3 (79×20×126) WH125-28-F3 (79×28×126)	 LC115-F3 (69×19.5×115) LC115H-F3 (69×28×115)	 LCS115-F3 (74×24×120) LCS115H-F3 (74×32.5×120)	 LCT115-F3 (76×28×121.9) LCT115H-F3 (76×36.5×121.9))
 WH145-20-F4 (88×20×146)	 LC135-F4 (76×27×135) LC135H-F4 (76×35×135)	 LCS135-F4 (81×32×141) LCS135H-F4 (81×40×141)	 LCT135-F4 (85×40×143.9) LCT135H-F4 (85×48×143.9)
	 LC145S-F6 (96×20×145) LC145H-F6 (96×35×145)	 LCS145-F6 (101×32×151) LCS145H-F6 (101×40×151)	 LCT145-F6 (105×40×153.9) LCT145H-F6 (105×48×153.9)
 WH145-25-M2 (88×25×146) WH145-33-M2 (88×33×146)	 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)	 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)	 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)
 WH145-25-M3 (88×25×146) WH145-33-M3 (88×33×146)	 LC135-M3 (76×27×135) LC135H-M3 (76×35×135)	 LCS135-M3 (81×32×141) LCS135H-M3 (81×40×141)	 LCT135-M3 (85×40×143.9) LCT135H-M3 (85×48×143.9)
 WH170-25-M4 (95×25×171) WH170-33-M4 (95×33×171)	 LC145-M4 (96×27×145) LC145H-M4 (96×35×145) LC165-M4 (80×27×165) LC165H-M4 (80×35×165)	 LCS145-M4 (101×32×151) LCS145H-M4 (101×40×151) LCS165-M4 (85×32×171) LCS165H-M4 (85×40×171)	 LCT145-M4 (105×40×153.9) LCT145H-M4 (105×48×153.9) LCT165-M4 (89×40×173.9) LCT165H-M4 (89×48×173.9)
 WH190-25-M6 (126×25×191) WH190-33-M6 (126×33×191)			
	 LC115H-9V (69×28×115) LC135-9V (76×27×135) LC135H-9V (76×35×135)	 LCS115H-9V (74×32.5×120) LCS135-9V (81×32×141) LCS135H-9V (81×40×141)	 LCT115H-9V (76×36.5×121.9) LCT135-9V (85×40×143.9) LCT135H-9V (85×48×143.9)

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

IP67 PORTABLE CASE WC series



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

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

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

High waterproof performance with both TPE and silicone gasket

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

The durable silicone gasket maintains the battery lid seal.

Insert nut and screw help to maintain the waterproofing performance of the battery compartment even after repeated opening/closing.

Great protection by TPE sides

Side grips of TPE material provide a comfortable grip and protection against drop impact.



Available in 3 different color combinations



APPLICATION EXAMPLE

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

Multi-function Infrared Remote Controller



Emergency Call Receiver / Transmitter



Long Range Keyfob Remote Controller



GPS Vehicle Tracker



Custom embossed or standard overlay sheets with low initial costs are available

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.

*applicable to small quantity orders



- Double shot injection molded TPE Grip and ABS Body.
- New CR2450/CR2477 battery compartment model added. Case with a CR2032 coin battery, 2x AAA battery compartment and no battery types are also available.
- 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 31 for coin battery contact installation steps.

Technical Data

Protection class : IP67
 Operating temperature : -10°C ~ +50°C
 Recommended torque :
 WC72 • 90 • 100 : 0.06 ~ 0.08 N • m
 WC105 : 0.13 ~ 0.15 N • m

WC72-□, WC90-□, WC100-20

WC105-28

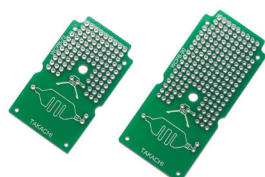


Components

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 • WC100 : Stainless steel SUS304 WC105 : Brass • Hard steel wire	Nickel plated
5	O-ring*	1	Silicone	Black
6	Screw	7	Stainless steel SUS304	Unfinished

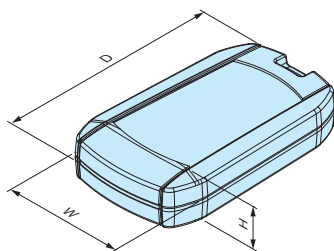
*Not applicable to the N (no battery compartment type) models.

Accessories (Optional parts)

Exclusive PCB WCPB series
See page 33Strap STPS series
See page 34PCB mounting screw EM-1.6
See page 398Neodymium magnet NMG series
See page 392

WC dimensions

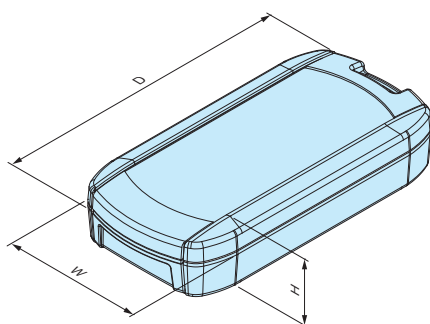
WC72-□, WC90-□



Battery Compartment Types

Type	N	C	R	F2
	None	CR2032 × 1	CR2450 / 2477 × 1	AAA × 2
Battery Compartment				

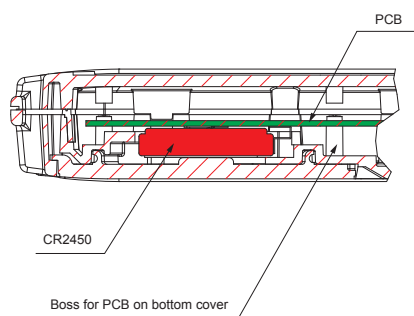
WC100-20, WC105-28



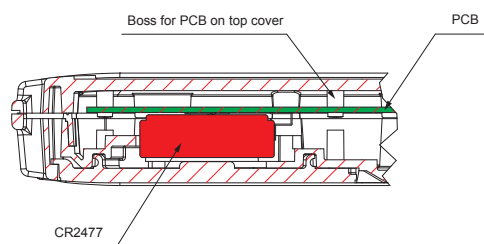
Color Type

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

CR2450 × 1 on WC100-20-R -□□ (PCB on bottom cover)



CR2477 × 1 on WC100-20-R -□□ (PCB on top cover)



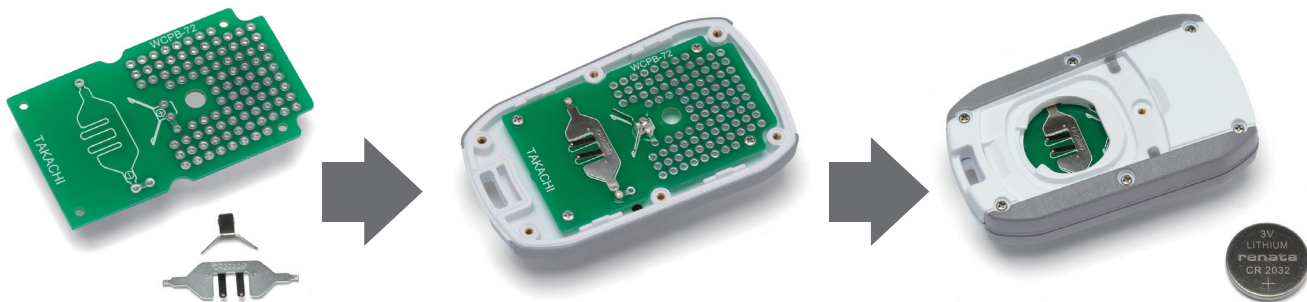
*Not compatible with Renata CR2477N battery

Product no. / Details

■ 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
NEW WC100-20-N -□□	49	20.5	100	None	35
NEW WC100-20-R -□□	49	20.5	100	CR2450×1 / CR2477×1	40
WC105-28-N -□□	50.5	28.2	105	None	47
WC105-28-F2-□□	50.5	28.2	105	AAA × 2	58.5

Coin Battery Contact Installation Steps



Solder the contacts onto the PCB. Install the PCB on the top or bottom cover.

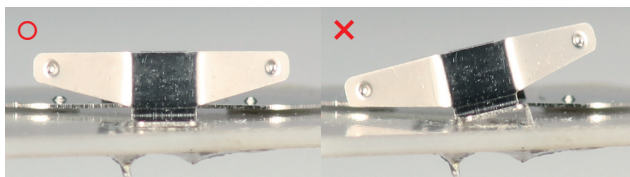
All set!

CAUTION

- When installing the battery terminal, make sure that it is parallel to the PCB. The battery may become stuck if installed at an angle. In addition, when mounting PCB, use a 1mm PCB. Please note batteries cannot be used with PCB thicker than 1mm.



- Battery direction is incised on the inner side of the battery lid.



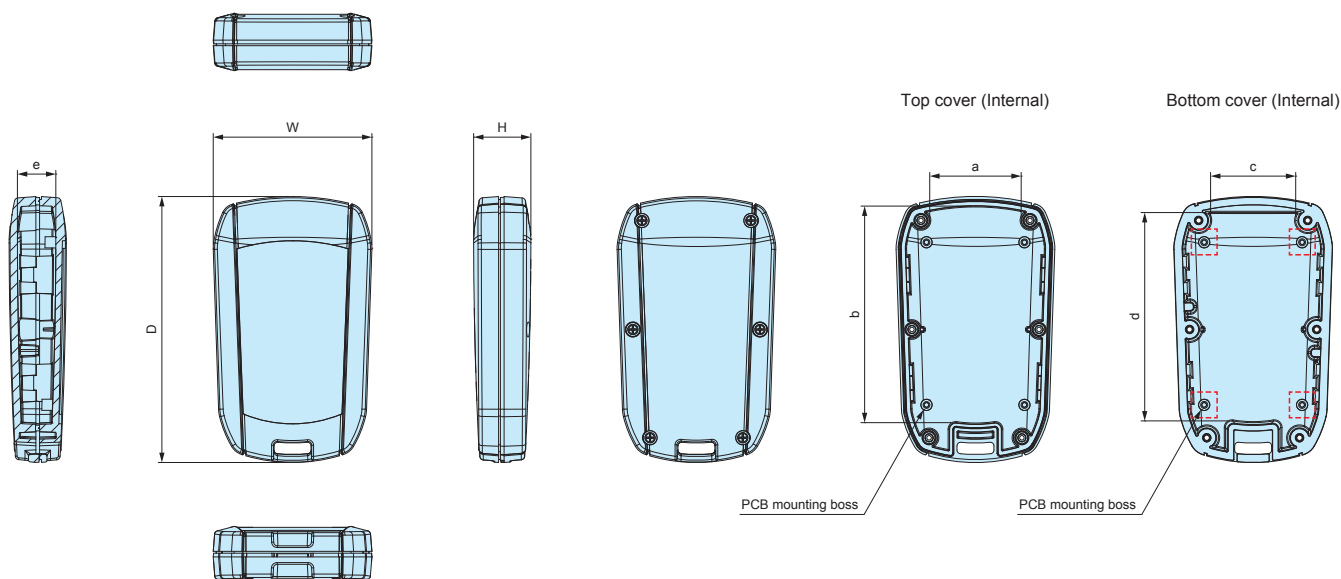
WC dimensions

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

WC72-15-N / WC72-21-N
WC90-15-N / WC90-21-N
WC100-20-N / WC105-28-N

*WC72-15-N and WC90-15-N have no bosses for PCB on bottom cover.

*WC100-20-N and WC105-28-N have different design from shown in the figure.



Product no.	W	H	D	a	b	c	d	e
WC 72-15-N-□□	43	15.5	72	24.7	58.6	23.6	58.4	10.4
WC 72-21-N-□□	43	21.5	72	24.7	58.6	23	56.3	16.3
WC 90-15-N-□□	44.2	15.7	90	26.1	76.6	25	76.4	10.4
WC 90-21-N-□□	44.2	21.7	90	26.1	76.6	24.4	74.3	16.4
WC100-20-N-□□	49	20.5	100	29	84.4	27.7	81.6	14.5
WC105-28-N-□□	50.5	28.2	105	26.4	87.9	24.2	84.1	22.4

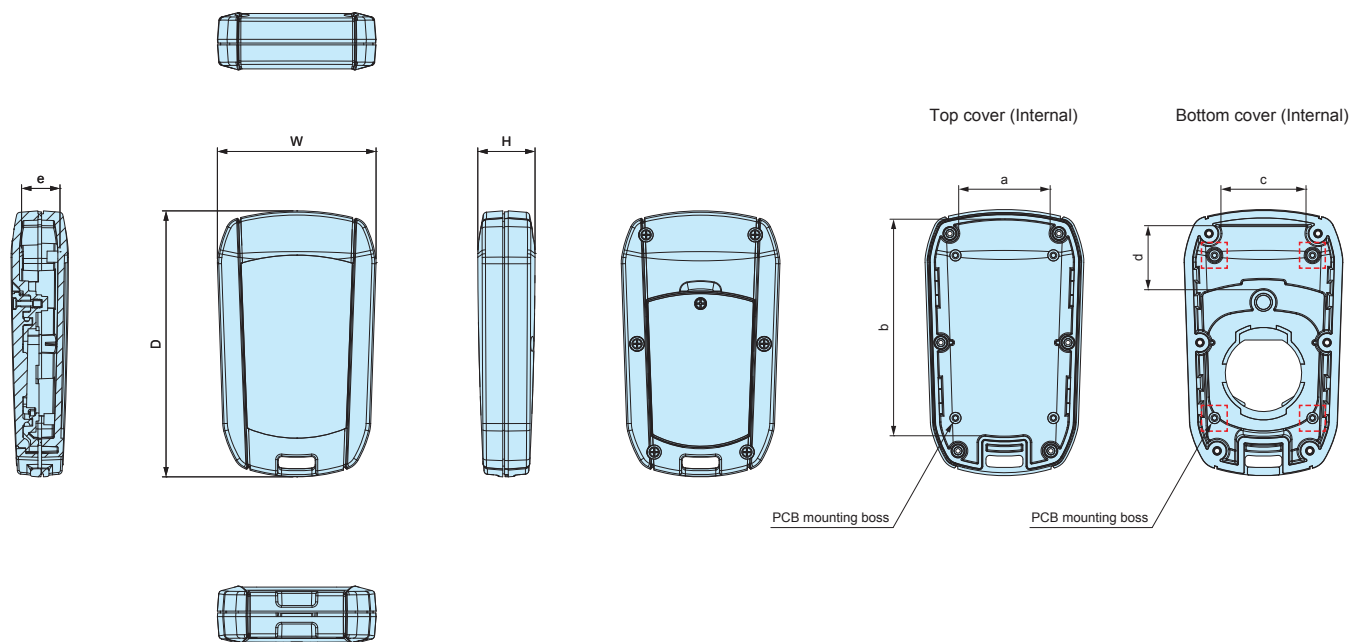
WC dimensions

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

WC72-15-C / WC72-21-C
WC90-15-C / WC100-20-R

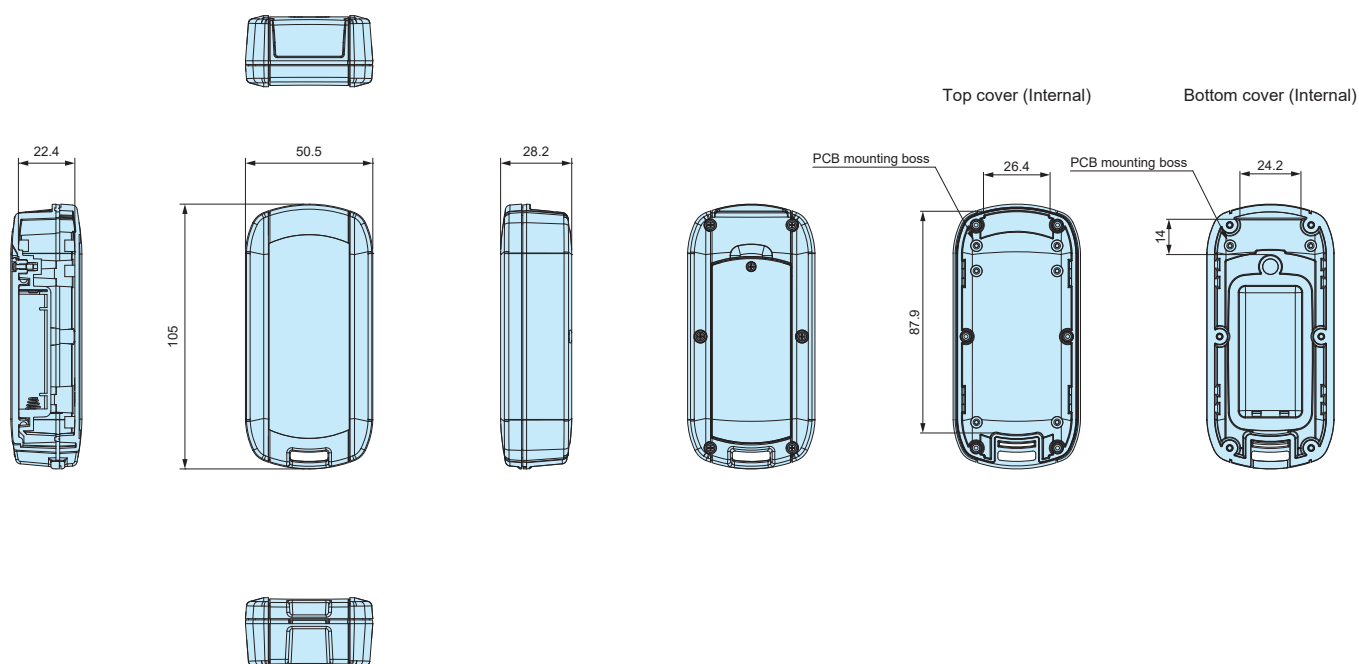
*WC72-21-C and WC100-20-R have bosses for PCB on bottom cover.

*WC100-20-R has different design from shown in the figure.



Product no.	W	H	D	a	b	c	d	e
WC 72-15-C-□□	43	15.5	72	24.7	58.6	23.8	19	10.4
WC 72-21-C-□□	43	21.5	72	24.7	58.6	23	17.3	16.3
WC 90-15-C-□□	44.2	15.7	90	26.1	76.6	25	36.9	10.4
WC100-20-R-□□	49	20.5	100	29	84.4	27.7	31.3	14.5

WC105-28-F2-□□



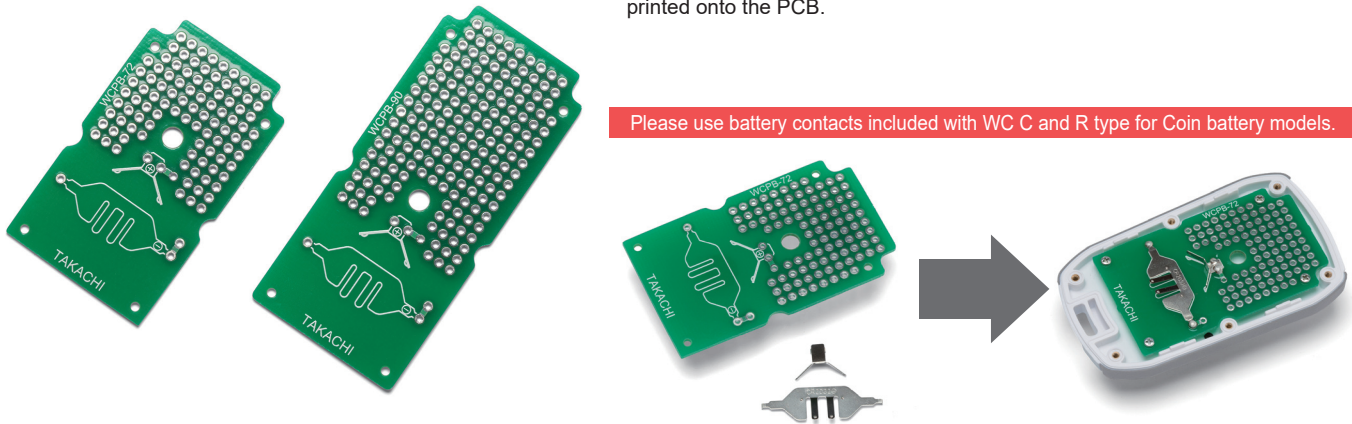


WCPB series

EXCLUSIVE PCB for WC

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

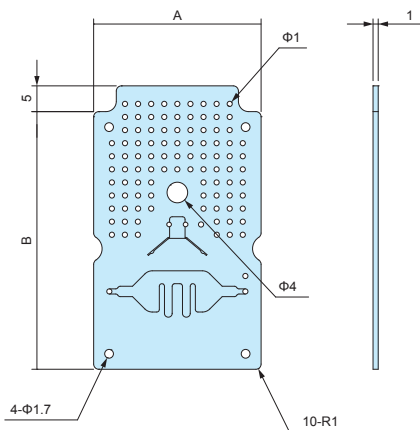
Please use battery contacts included with WC C and R type for Coin battery models.



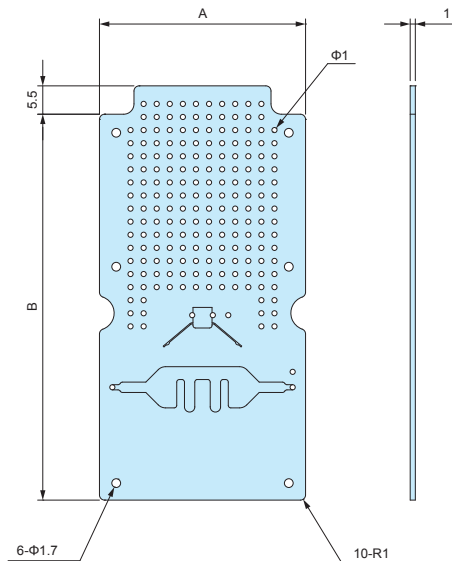
WCPB dimensions

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

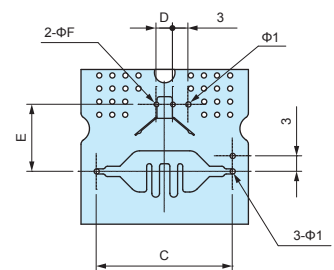
WCPB-72 / WCPB-90



WCPB-100



Battery contact position details



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 resist
Screw	4 or 6	Steel (Tapping M1.6-4)	Steel (Tapping M1.6-4)

Product no. / Details

Product no.	A	B	C	D	E	F	Screw pcs	Suitable models
WCPB- 72	32.5	49.8	26.4	3.2	13	0.9	4	WC72-15-C • WC72-21-C
WCPB- 90	32.9	68	26.4	3.2	13	0.9	4	WC90-15-C
NEW WCPB-100	40	74.9	35	4	14	1	6	WC100-20-R

WH series

IP67 WATERPROOF HAND-HELD ENCLOSURE



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

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

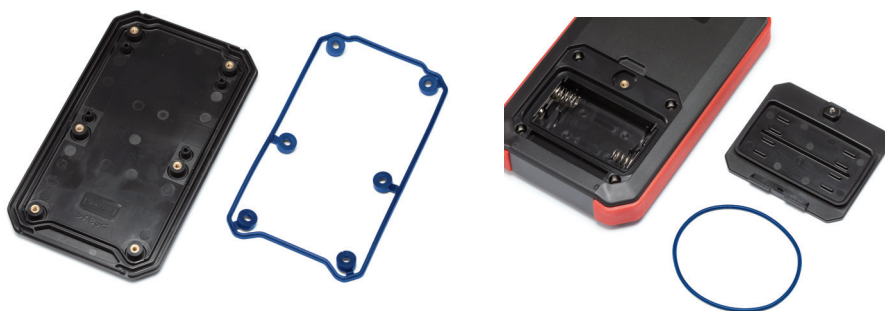
IPx7 : No ingress of water when submerged up to a depth of 1 m for 30 min

High waterproof performance with a silicone gasket

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

Side grip provides great protection

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



Available in 10 different color combinations



Information on waterproofing overlay sheets



APPLICATION EXAMPLE

Ultrasonic Thickness Gauge



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



APPLICATION EXAMPLE

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

Portable Signal Generator



Wireless CO₂ Microclimate Sensor



Wireless Food Probe Sensor



Wireless Temperature Detector



Sigfox Network Measurement Device

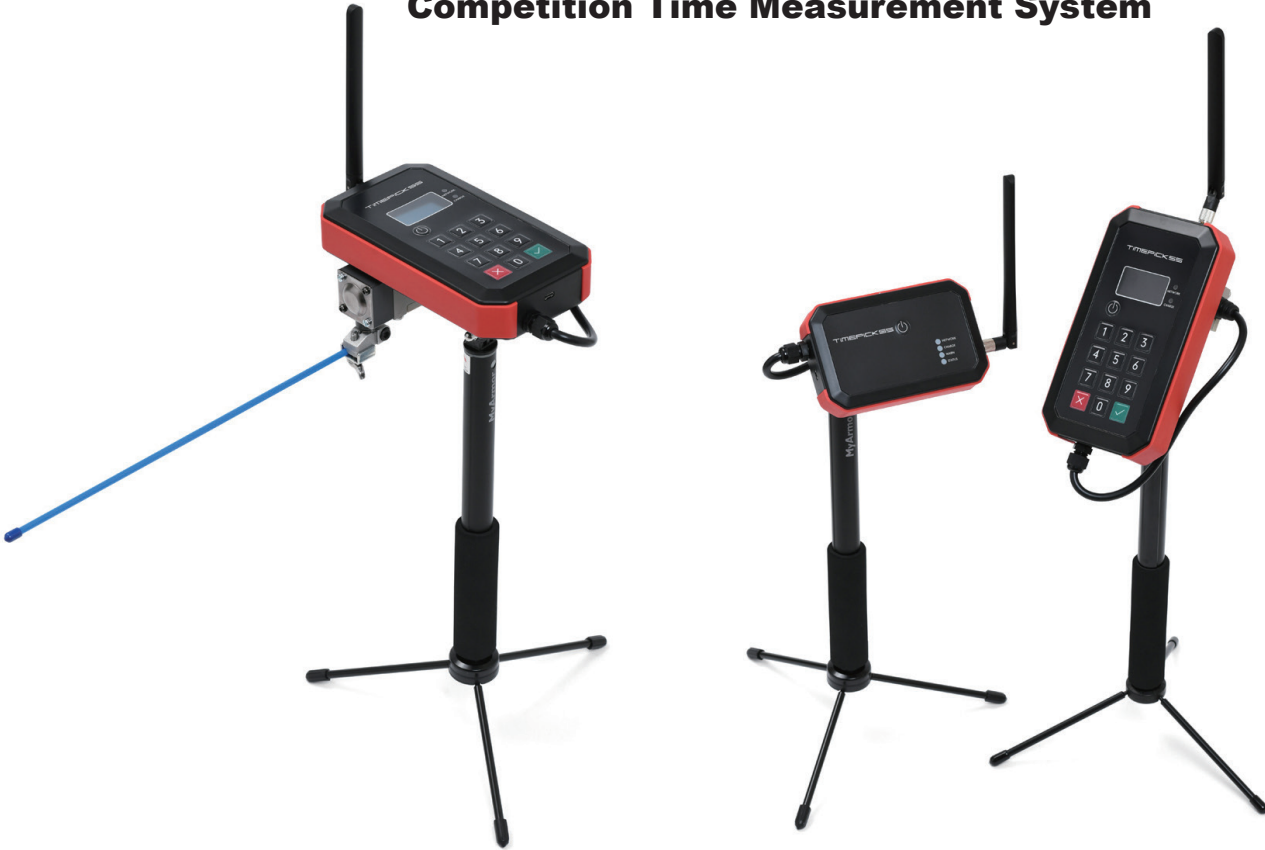


IoT Temperature Monitoring Sensor for HACCP



*See page 23 for further details on Sigfox.

Competition Time Measurement System



Portable Airflow Meter



Honey Bee Tracker



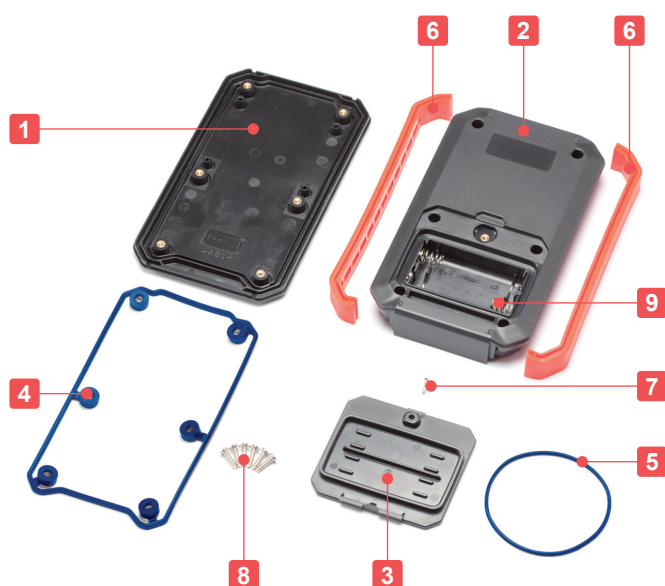
Digital X-ray System





Technical Data

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



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

Components

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

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

Accessories (Optional parts)



PCB mounting screw EM-2.3
See page 398



Tapping standoff TPS series
See page 397



Cable gland
See page 181 ~ 193



Neodymium magnet NMG series
See page 392

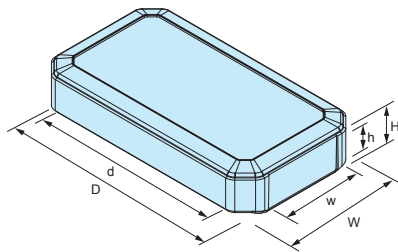
Battery Compartment Types

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

Color Type

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

WH dimensions



Product no. / Details

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

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

LCT•LCS•LC•LCE HAND-HELD PLASTIC CASE

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

9 different sizes with 8 different battery compartment types line-up available.

Consisting of a line-up of 4 different series: LC - plastic case, LCT - case with shockproof silicone cover, LCS - case with silicone cover, and LCE - EMC shielded plastic case.

LCT Plastic Case with Shockproof Silicone Cover - 4 Rugged Shockproof Silicone Cover Colors



LCS Plastic Case with Silicone Cover - 5 Silicone Cover Colors



CUSTOMIZATION



Machining



Custom cut on silicone cover



Custom color, custom shaped silicone cover



Digital printed overlay



APPLICATION EXAMPLE

Metal Coating Thickness Gauge



Solar Panel Trouble Checker



Solar Cell Connection Checker



Digital Pressure Gauge Setter



Fluorescent Portable Dissolved Oxygen Meter



Distribution Transformer Tester



Network Partial Discharge Checker



Radiation Survey Meter



Mini Radiation Survey Meter



Wireless Voltage Probe



Portable Anemometer



Ultrasonic Thickness Gauge



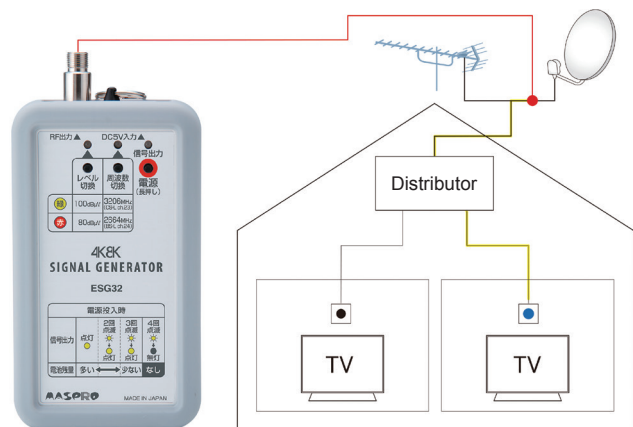
Hyperhidrosis Treatment Device



RF Scope



Satellite Broadcasting Signal Generator



Onboard Programmer



Code Debugger





Technical Data

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

- Plastic case with shockproof 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 more.

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	1 set	Brass	Nickel plated
	Battery snap • Cushion sponge (only for 9V models)	1 set	Brass : PVC • Polyurethane foam (UL94HF-1)	Nickel plated • Black
7	Silicone cover	1	Silicone	Orange • Green • Navy • Dark gray

Accessories (Optional parts)



Tapping standoff TPS series
See page 397



PCB mounting screw EM-2.3
See page 398



TORX screw MR series
See page 398



Key ring CR-20
See page 389



Strap STP series
See page 389

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

Product no. / Details

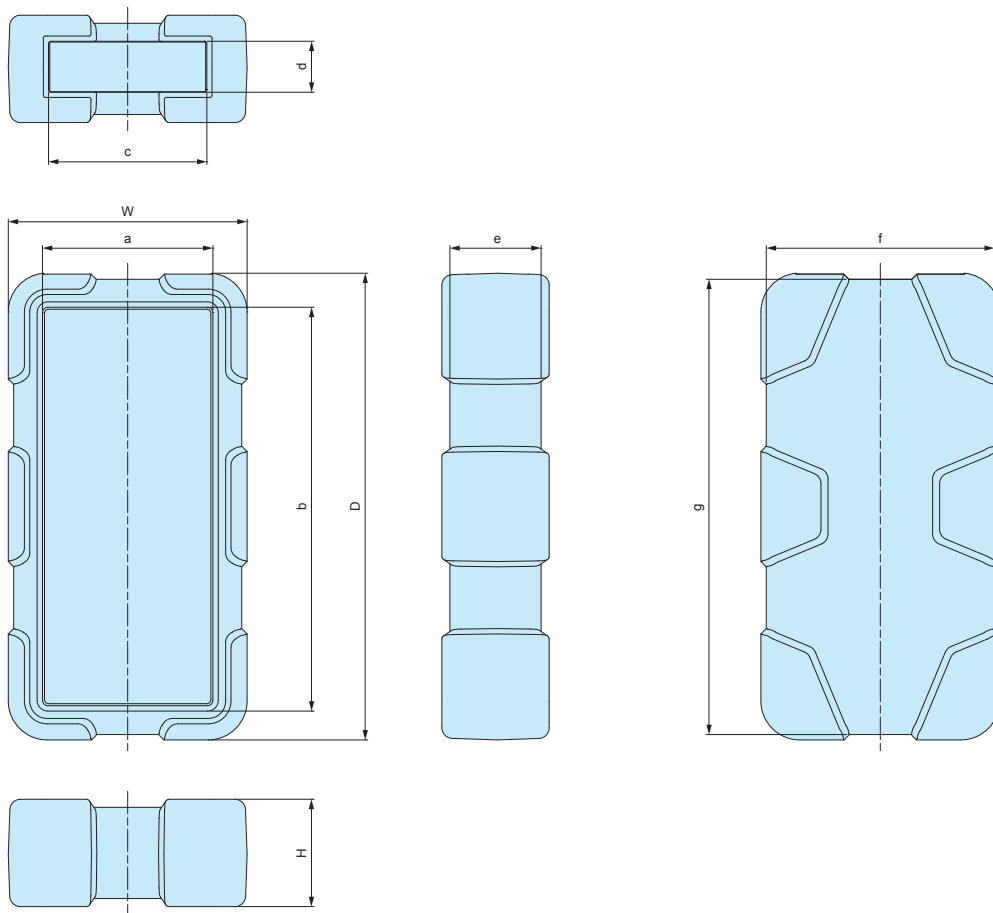
■ Please suffix color code at the end of the product number.

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
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

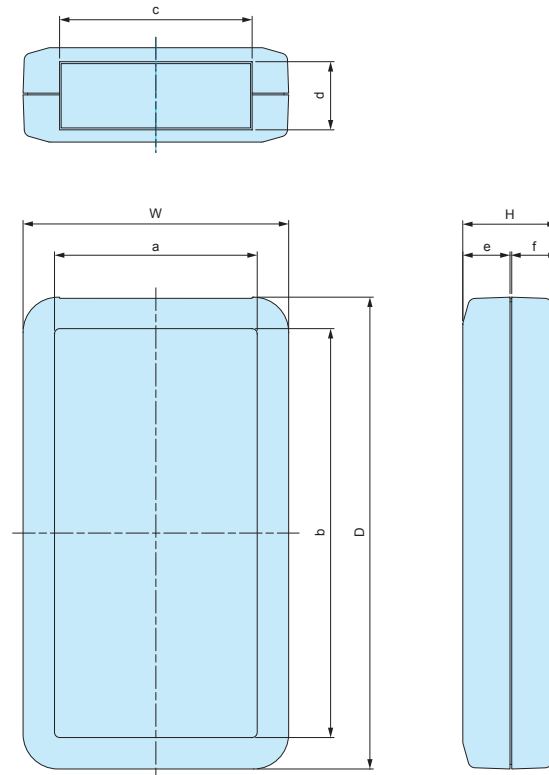
■ DXF/DWG/PDF drawings available on our website.



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
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

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



■ 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
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

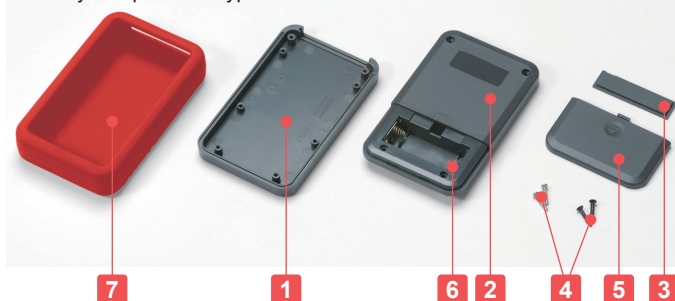


Technical Data

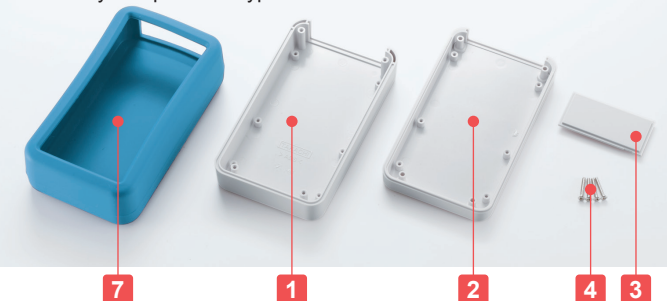
Protection class: IP40
Operating temperature: -10°C ~ +60°C

- 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 incised on the inside of the battery compartments.
- Suitable for measuring instruments, test devices, wireless communication devices, medical devices and more.

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	1 set	Brass	Nickel plated
	Battery snap • Cushion sponge (only for 9V models)	1 set	Brass : PVC • Polyurethane foam (UL94HF-1)	Nickel plated • Black
7	Silicone cover	1	Silicone	Red • Green • Blue • Light gray • Dark gray

Accessories (Optional parts)



Tapping standoff TPS series
See page 397



PCB mounting screw EM-2.3
See page 398



TORX screw MR series
See page 398

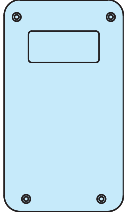
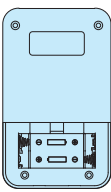
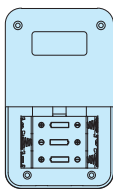
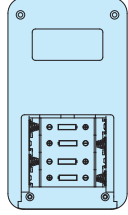
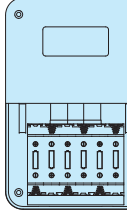
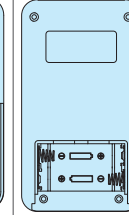
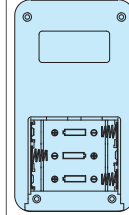
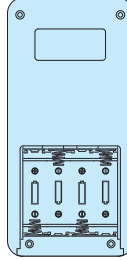
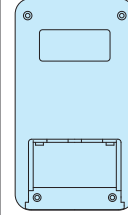


Key ring CR-20
See page 389



Strap STP series
See page 389

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

Product no. / Details

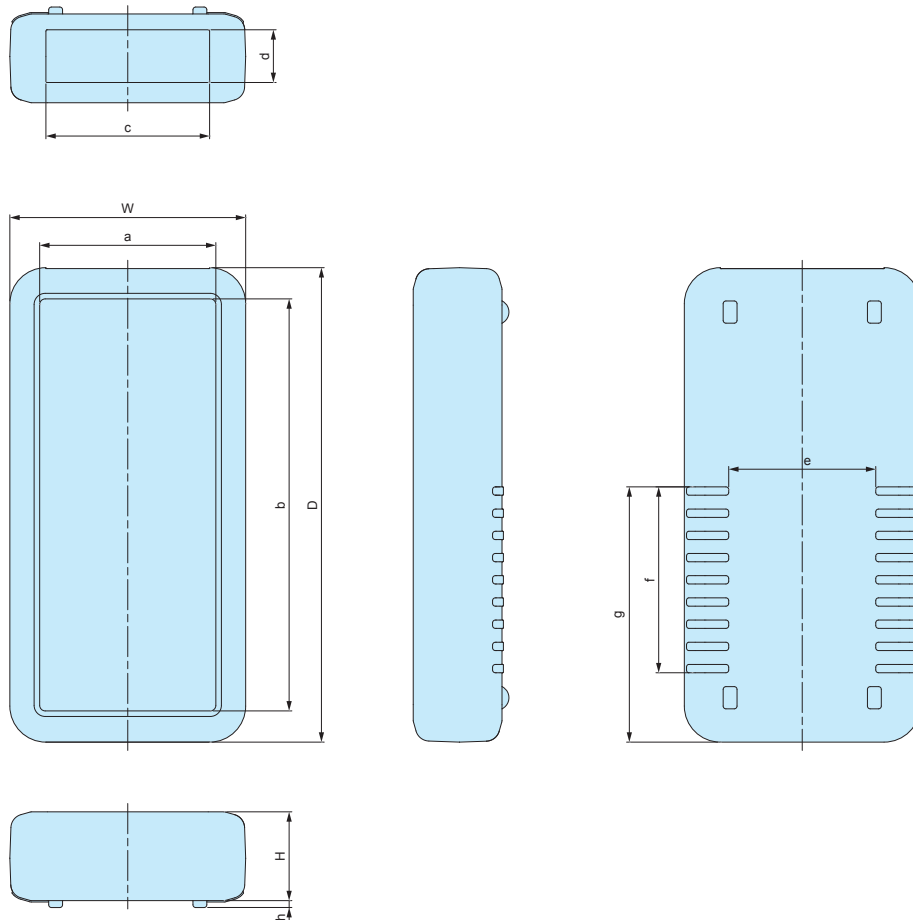
■ Please suffix color code at the end of the product number.

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
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

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

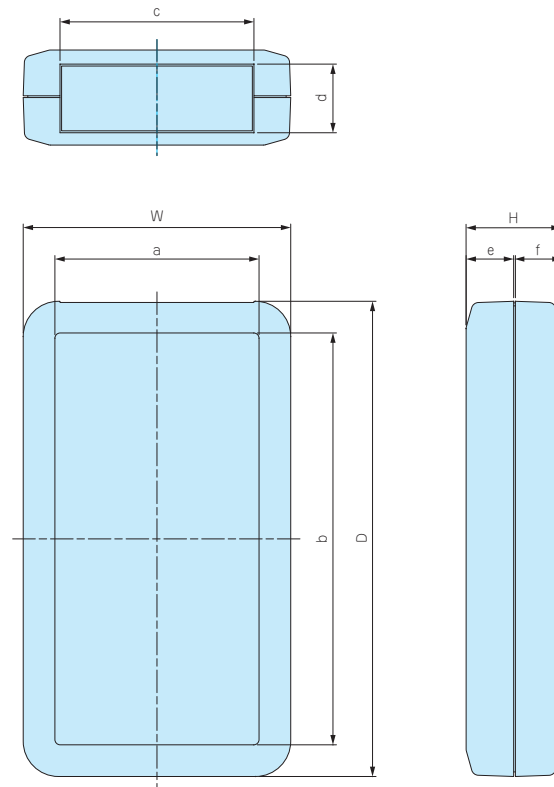


■ Please suffix color code at the end of the product number.

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
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

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



■ 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
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

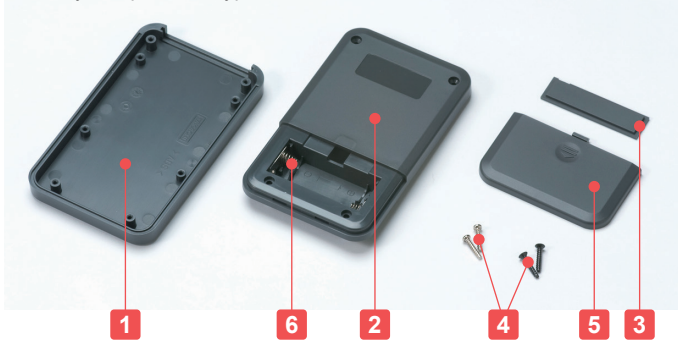


Technical Data

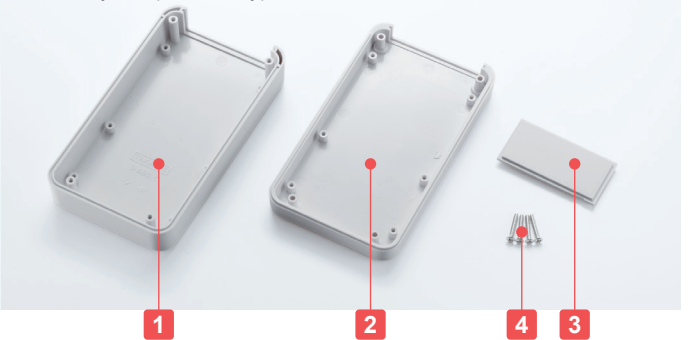
Protection class: IP40
Operating temperature: -10°C ~ +60°C

- 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 measuring instruments, testing devices, wireless communication gadgets, medical equipment, and more.

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	1 set	Brass	Nickel plated
	Battery snap • Cushion sponge (only for 9V models)	1 set	Brass : PVC • Polyurethane foam (UL94HF-1)	Nickel plated • Black

Accessories (Optional parts)



Tapping standoff TPS series
See page 397



PCB mounting screw EM-2.3
See page 398



Belt clip GDH series
See page 390



Key ring • Strap CR-20 • STP series
See page 389



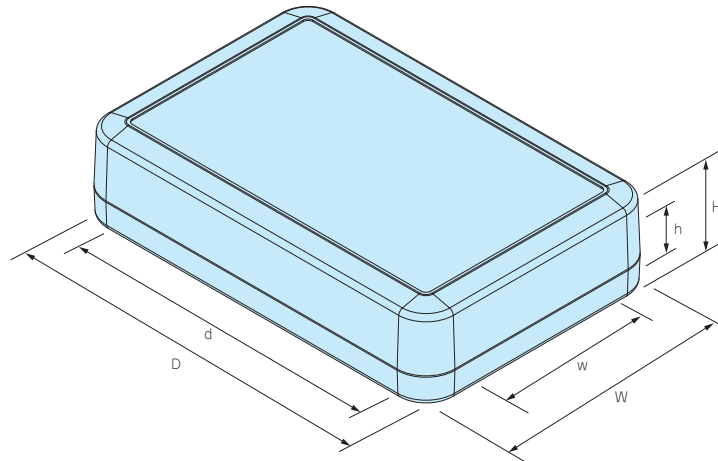
Suspension bracket WM series
See page 391



Neodymium magnet NMG series
See page 392

LC dimensions

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



Battery Compartment Type

Type	N None	F2 AAx2	F3 AAx3	F4 AAx4	F6 AAx6	M2 AAx2	M3 AAx3	M4 AAx4	9V 9Vx1
Battery compartment									

Product no. / Details

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

Product no.		External dimensions			Internal dimensions			Screw	Battery compartment	Weight (g)
● Dark gray	● Off-white	W	H	D	w	h	d			
LC115 -N -D	LC115 -N -W	69	19.5	115	61.5	9.5	86.5	M2.6-14 flat head x 4 pcs	None	70
LC115 -F2 -D	LC115 -F2 -W	69	19.5	115	61.5	9.5	63	M2.6-14 flat head x 2 pcs / M2.6-12 pan head x 2 pcs	AAA x 2	74.5
LC115 -F3 -D	LC115 -F3 -W	69	19.5	115	61.5	9.5	52	M2.6-14 flat head x 2 pcs / M2.6-12 pan head x 2 pcs	AAA x 3	76.5
LC115H -N -D	LC115H -N -W	69	28	115	60.9	18	86.5	M2.6-18 flat head x 4 pcs	None	80
LC115H -F2 -D	LC115H -F2 -W	69	28	115	60.9	18	63	M2.6-18 flat head x 2 pcs / M2.6-14 pan head x 2 pcs	AAA x 2	84.5
LC115H -F3 -D	LC115H -F3 -W	69	28	115	60.9	18	52	M2.6-18 flat head x 2 pcs / M2.6-14 pan head x 2 pcs	AAA x 3	86
LC115H -M2 -D	LC115H -M2 -W	69	28	115	60.9	18	54.8	M2.6-18 flat head x 2 pcs / M2.6-14 pan head x 2 pcs	AA x 2	88.5
LC115H -9V -D	LC115H -9V -W	69	28	115	60.9	18	55.7	M2.6-18 flat head x 2 pcs / M2.6-14 pan head x 2 pcs	9V x 1	88
LC135 -N -D	LC135 -N -W	76	27	135	68.2	16	107	M2.6-18 flat head x 4 pcs	None	95
LC135 -F4 -D	LC135 -F4 -W	76	27	135	68.2	16	59.2	M2.6-18 flat head x 2 pcs / M2.6-14 pan head x 2 pcs	AAA x 4	110
LC135 -M2 -D	LC135 -M2 -W	76	27	135	68.2	16	74.3	M2.6-18 flat head x 2 pcs / M2.6-14 pan head x 2 pcs	AA x 2	108
LC135 -M3 -D	LC135 -M3 -W	76	27	135	68.2	16	59.2	M2.6-18 flat head x 2 pcs / M2.6-14 pan head x 2 pcs	AA x 3	113.5
LC135 -9V -D	LC135 -9V -W	76	27	135	68.2	16	74.3	M2.6-18 flat head x 2 pcs / M2.6-14 pan head x 2 pcs	9V x 1	111.5
LC135H -N -D	LC135H -N -W	76	35	135	67.7	24	107	M2.6-18 flat head x 4 pcs	None	107.5
LC135H -F4 -D	LC135H -F4 -W	76	35	135	67.7	24	59.2	M2.6-18 flat head x 2 pcs / M2.6-14 pan head x 2 pcs	AAA x 4	122
LC135H -M2 -D	LC135H -M2 -W	76	35	135	67.7	24	74.3	M2.6-18 flat head x 2 pcs / M2.6-14 pan head x 2 pcs	AA x 2	121
LC135H -M3 -D	LC135H -M3 -W	76	35	135	67.7	24	59.2	M2.6-18 flat head x 2 pcs / M2.6-14 pan head x 2 pcs	AA x 3	126
LC135H -9V -D	LC135H -9V -W	76	35	135	67.7	24	74.3	M2.6-18 flat head x 2 pcs / M2.6-14 pan head x 2 pcs	9V x 1	123.5
LC145S -N -D	LC145S -N -W	96	20	145	87.9	9.5	112.9	M2.6-14 flat head x 4 pcs	None	110
LC145S -F6 -D	LC145S -F6 -W	96	20	145	88.1	9.2	67.8	M2.6-14 flat head x 2 pcs / M2.6-12 pan head x 2 pcs	AAA x 6	130
LC145 -N -D	LC145 -N -W	96	27	145	87.8	16.5	112.9	M2.6-18 flat head x 4 pcs	None	121
LC145 -F6 -D	LC145 -F6 -W	96	27	145	87.8	16.5	67.8	M2.6-18 flat head x 2 pcs / M2.6-14 pan head x 2 pcs	AAA x 6	141
LC145 -M2 -D	LC145 -M2 -W	96	27	145	87.8	16.5	86.8	M2.6-18 flat head x 2 pcs / M2.6-14 pan head x 2 pcs	AA x 2	135
LC145 -M4 -D	LC145 -M4 -W	96	27	145	87.8	16.5	63.4	M2.6-18 flat head x 2 pcs / M2.6-14 pan head x 2 pcs	AA x 4	142
LC145H -N -D	LC145H -N -W	96	35	145	87.2	24.5	112.9	M2.6-18 flat head x 4 pcs	None	135
LC145H -F6 -D	LC145H -F6 -W	96	35	145	87.2	24.5	67.8	M2.6-18 flat head x 2 pcs / M2.6-14 pan head x 2 pcs	AAA x 6	155.5
LC145H -M2 -D	LC145H -M2 -W	96	35	145	87.2	24.5	86.8	M2.6-18 flat head x 2 pcs / M2.6-14 pan head x 2 pcs	AA x 2	149
LC145H -M4 -D	LC145H -M4 -W	96	35	145	87.2	24.5	63.4	M2.6-18 flat head x 2 pcs / M2.6-14 pan head x 2 pcs	AA x 4	156
LC165 -N -D	LC165 -N -W	80	27	165	72.2	16	137	M2.6-18 flat head x 4 pcs	None	120.5
LC165 -M4 -D	LC165 -M4 -W	80	27	165	72.2	16	79	M2.6-18 flat head x 2 pcs / M2.6-14 pan head x 2 pcs	AA x 4	140
LC165H -N -D	LC165H -N -W	80	35	165	71.7	24	137	M2.6-18 flat head x 4 pcs	None	134.5
LC165H -M4 -D	LC165H -M4 -W	80	35	165	71.7	24	79	M2.6-18 flat head x 2 pcs / M2.6-14 pan head x 2 pcs	AA x 4	153.5



EMC
Shielding



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 measuring instruments, testing devices, wireless communication gadgets, medical equipment, and more.

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 57 ~ 58



Tapping standoff TPS series
See page 397



PCB mounting screw EM-2.3
See page 398



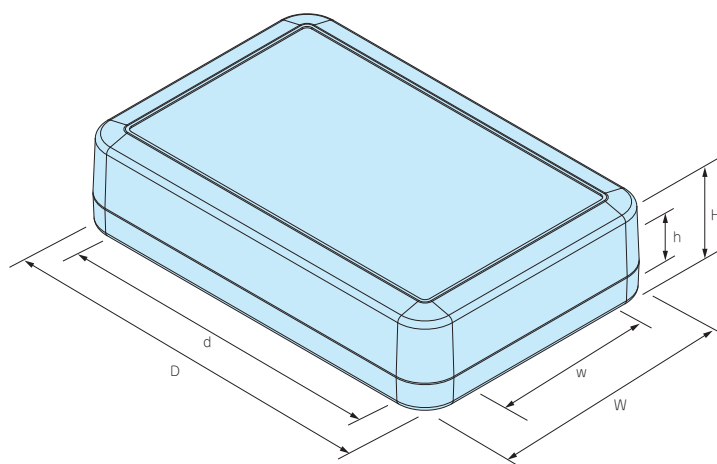
TORX screw MR series
See page 398



Suspension bracket WM series
See page 391

LCE dimensions

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



Product no. / Details

Product no.	External dimensions			Internal dimensions			Screw	Weight (g)
	W	H	D	w	h	d		
LCE115 -N -D	69	19.5	115	61.5	9.5	86.5	M2.6-14 flat head x 4 pcs	72.5
LCE115H -N -D	69	28	115	60.9	18	86.5	M2.6-18 flat head x 4 pcs	84
LCE135 -N -D	76	27	135	68.2	16	107	M2.6-18 flat head x 4 pcs	97
LCE145H -N -D	96	35	145	87.2	24.5	112.9	M2.6-18 flat head x 4 pcs	137
LCE165H -N -D	80	35	165	71.7	24	137	M2.6-18 flat head 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



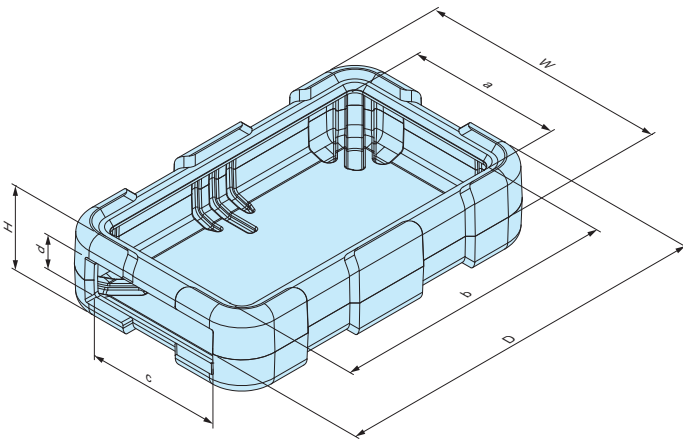
LCTP series**SHOCKPROOF SILICONE COVER for LC • LCE****Color Type**

Code	 Orange	 Green	 Navy	 Dark gray
Color				

■ Shock-proof silicone cover for LC and LCE series.

LCTP dimensions

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

**APPLICATION EXAMPLE**

Ultrasonic Hardness Tester

**Components**

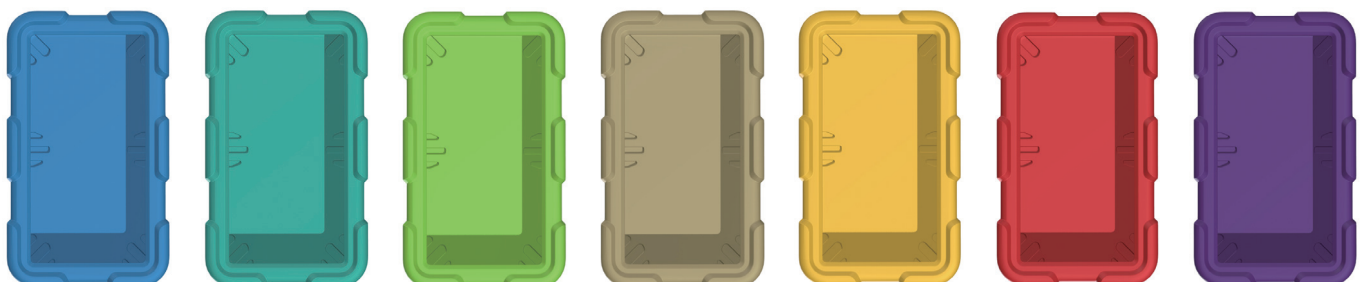
Part name	Material	Color
Silicone cover	Silicone	Orange • Green • Navy • Dark gray

Product no. / Details

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

Product no.	W	H	D	a	b	c	d	Suitable models	Weight (g)
LCTP115 -□	76	28	121.9	55.5	101.5	48.3	12	LC115 • LCE115	53.5
LCTP115H-□	76	36.5	121.9	55.5	101.5	48.3	20.5	LC115H • LCE115H	61
LCTP135 -□	85	40	143.9	59.5	118.5	55	19	LC135 • LCE135	115.5
LCTP135H-□	85	48	143.9	59.5	118.5	55	27	LC135H	124
LCTP145 -□	105	40	153.9	76.5	125.5	71	19	LC145	137.5
LCTP145H-□	105	48	153.9	76.5	125.5	71	27	LC145H • LCE145H	147
LCTP165 -□	89	40	173.9	63.5	148.5	59	19	LC165	143
LCTP165H-□	89	48	173.9	63.5	148.5	59	27	LC165H • LCE165H	151.5

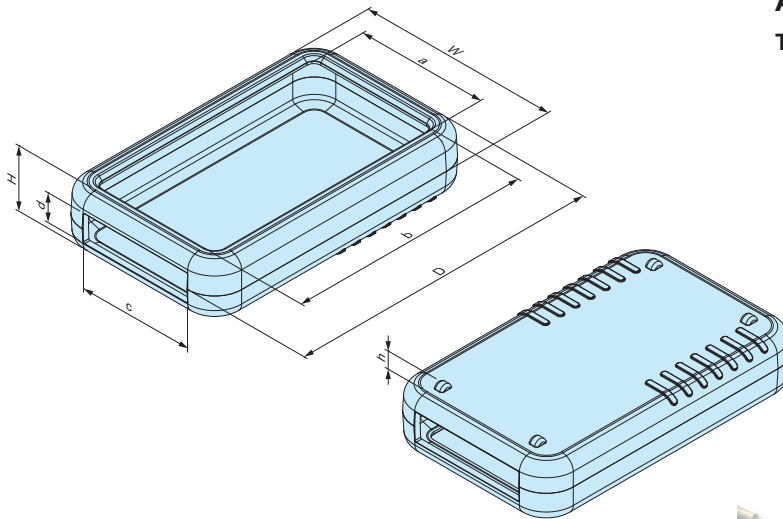
■ Custom color is available from just 1 pc. For 500 pcs or more, manufacturing costs will be similar to a standard color. Please inquire for more details.
For custom color order, please specify **PANTONE®** color code.



LCSC series**SILICONE COVER for LC • LCE****Color Type**

Code	[R] Red	[G] Green	[B] Blue	[D] Dark gray	[L] Light gray
Color					

■ Silicone cover for LC and LCE series.

LCSC dimensions

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

APPLICATION EXAMPLE**Temperature Surveillance Sensor****Components**

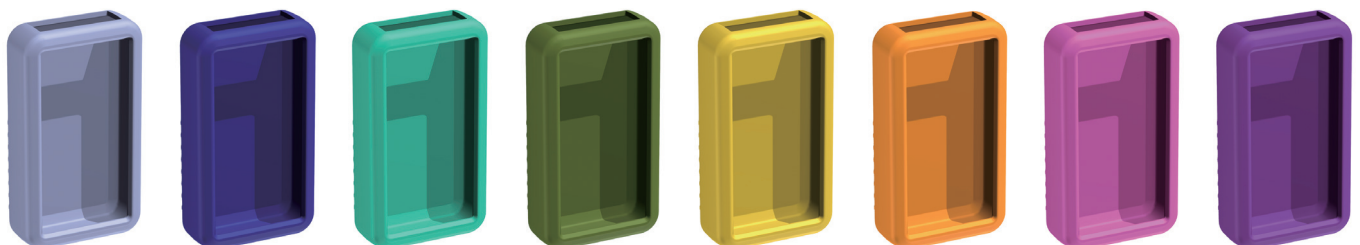
Part name	Material	Color
Silicone cover	Silicone	Red • Green • Blue • Dark gray • Light gray

Product no. / Details

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

Product no.	W	H	D	a	b	c	d	h	Suitable models	Weight (g)
LCSC115 -□	74	24	120	55.5	101.5	48.3	12	2	LC115 • LCE115	43
LCSC115H-□	74	32.5	120	55.5	101.5	48.3	20.5	2	LC115H • LCE115H	50
LCSC135 -□	81	32	141	59.5	118.5	55	19	2.5	LC135 • LCE135	70
LCSC135H-□	81	40	141	59.5	118.5	55	27	2.5	LC135H	75.5
LCSC145 -□	101	32	151	76.5	125.5	71	19	2.5	LC145	81
LCSC145H-□	101	40	151	76.5	125.5	71	27	2.5	LC145H • LCE145H	89
LCSC165 -□	85	32	171	63.5	148.5	59	19	2.5	LC165	82.5
LCSC165H-□	85	40	171	63.5	148.5	59	27	2.5	LC165H • LCE165H	86

■ Custom color is available from just 1 pc. For 500pcs or more, manufacturing costs will be similar to a standard color. Please inquire for more details.
For custom color order, please specify **PANTONE®** color code.



CSS·CS series

Slim designed small type handheld enclosures
with built-in coin cell battery compartment.

Suitable for IoT device, Remote controller, Portable GPS,
Wireless key-fob, RFID tag, small device, and more.

4 different sizes with 10 color variations each are available.



• Built-in battery compartment



Black



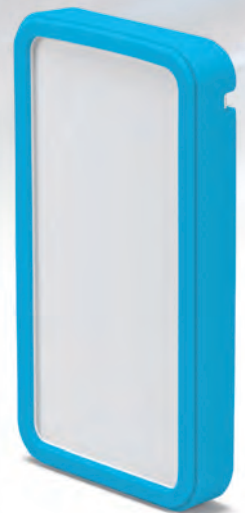
Light gray



Orange



Green



Cyan

APPLICATION EXAMPLE

Motor Sport Infrared Laptimer (Bluetooth 4.0 & Android Application)



Bluetooth Temperature Data Logger



Impact Detection Sensor for Relay Tester



Wireless Remote Control Switch



Handi Quilter Easy-Set Tension™ Kit



Wireless Microphone for Hearing Aid



USB Noise Remover



High Frequency Preamplifier



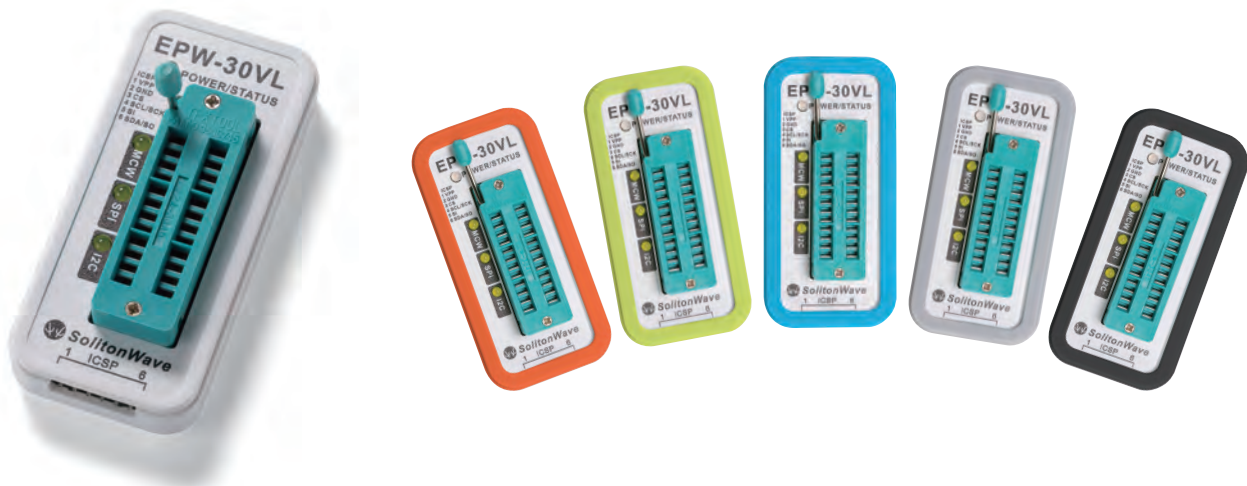
Indoor Environment Sensor



Detection Sensor for Wandering Behavior



Serial EEPROM Programmers



RFID Reader



HoneyBee Proximity Switch



Restroom Monitoring System



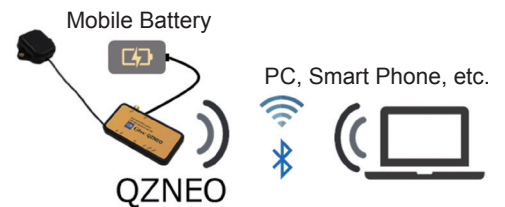
CO2 Meter



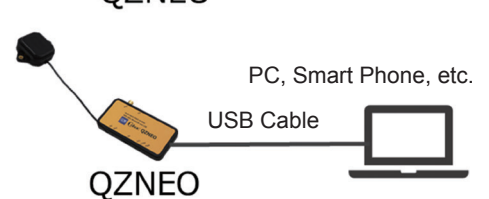
Dual-frequency GNSS Receiver



Wireless Connection



Wired Connection





- Small plastic case with silicone cover. Strong against drop impact while providing a secure grip.
- Select proper models by enclosure dimensions and capacity of the batteries.
Typical Capacity : CR2032 : 225mAh / CR2450 : 620mAh / CR2477 : 1000mAh
- Suitable for remote controller, wireless key fob, small tester/device and more.
- Available in 4 sizes with 16 models and selectable in 10 different color combinations.
- 2 types of silicone cover available with (Open) and without (Closed) rectangular cutout on the top side.

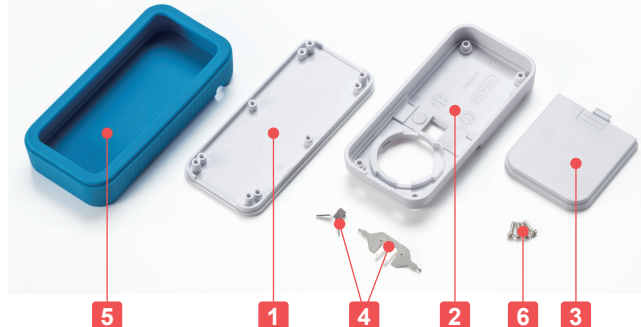
Technical Data

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

No battery compartment type



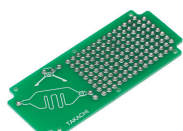
Battery compartment type



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 sets (CSS115)	Stainless steel SUS304	Nickel plated
5	Silicone cover	1	Silicone	Orange • Green • Cyan • Light gray • Black
6	Self-tapping screw	4	Steel M1.6-6	Nickel plated • Black trivalent chromate

Accessories (Optional parts)



Exclusive PCB CSPB series
See page 22



Strap STPS series
See page 34



PCB mounting screw EM-1.6
See page 398



TORX screw MR1.6-6S
See page 398

Silicone Cover Type

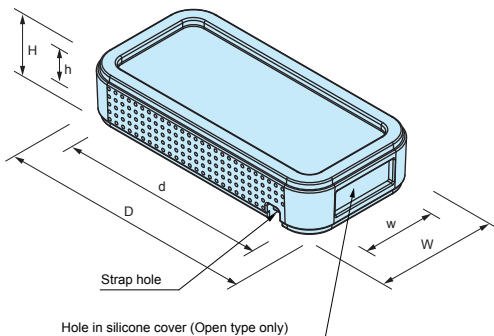
Code	CL Closed	OP Open
Shape		

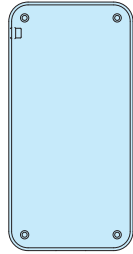
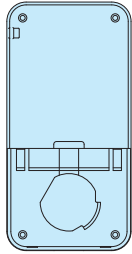
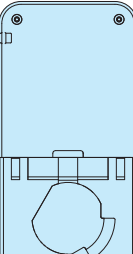
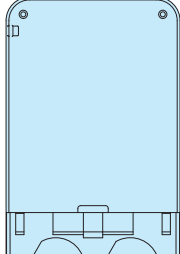
Color Type

Code	B O Black / Orange	B G Black / Green	B C Black / Cyan	B L Black / Light gray	B B Black / Black
Color					
Code	W O White / Orange	W G White / Green	W C White / Cyan	W L White / Light gray	W B White / Black
Color					

CSS dimensions

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



Type	CSS N Type	CSS75/90	CSS100 *1	CSS115
Battery compartment	None	CR2032 × 1	CR2450 × 1 or CR2477 *2 × 1	CR2032 × 2
				

*1 CSS100 battery type varies by PCB placement: CR2450 with PCB on bottom cover, or CR2477 with PCB on top cover. See page 20 for the details.

*2 Not compatible with Renata CR2477N battery.

Product no. / Details

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

Product no.	External dimensions			Internal dimensions			Battery compartment	Weight (g)
	W	H	D	w	h	d		
CSS 75N -CL -□□	38.6 (35)	15.5 (12)	78.6 (75)	26.6	5.3	59	None	24
CSS 75N -OP -□□	38.6 (35)	15.5 (12)	78.6 (75)	26.6	5.3	59	None	24
CSS 75 -CL -□□	38.6 (35)	15.5 (12)	78.6 (75)	26.6	5.3	25.4	CR2032×1	25
CSS 75 -OP -□□	38.6 (35)	15.5 (12)	78.6 (75)	26.6	5.3	25.4	CR2032×1	25
CSS 90N -CL -□□	48.6 (45)	15.5 (12)	93.6 (90)	36.6	5.3	74	None	36
CSS 90N -OP -□□	48.6 (45)	15.5 (12)	93.6 (90)	36.6	5.3	74	None	35
CSS 90 -CL -□□	48.6 (45)	15.5 (12)	93.6 (90)	36.6	5.3	40.4	CR2032×1	38
CSS 90 -OP -□□	48.6 (45)	15.5 (12)	93.6 (90)	36.6	5.3	40.4	CR2032×1	37
CSS100N -CL -□□	54.1 (50)	20.8 (16.8)	104.1 (100)	41.6	10.1	82	None	52
CSS100N -OP -□□	54.1 (50)	20.8 (16.8)	104.1 (100)	41.6	10.1	82	None	51
CSS100 -CL -□□	54.1 (50)	20.8 (16.8)	104.1 (100)	44.1	6.8	46	CR2450×1 / CR2477×1	54
CSS100 -OP -□□	54.1 (50)	20.8 (16.8)	104.1 (100)	44.1	6.8	46	CR2450×1 / CR2477×1	53
CSS115N -CL -□□	67.1 (63)	16 (12)	119.1 (115)	54.6	5.3	98	None	62
CSS115N -OP -□□	67.1 (63)	16 (12)	119.1 (115)	54.6	5.3	98	None	61
CSS115 -CL -□□	67.1 (63)	16 (12)	119.1 (115)	54.6	5.3	64.9	CR2032×2	65
CSS115 -OP -□□	67.1 (63)	16 (12)	119.1 (115)	54.6	5.3	64.9	CR2032×2	64

■ () value = enclosure dimension.

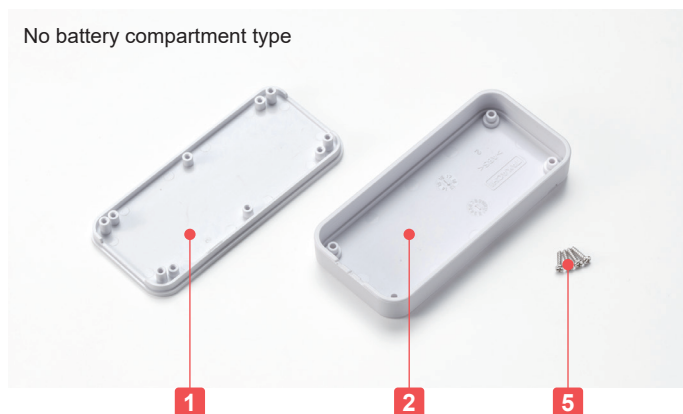


- Easy replacement of batteries. Battery contact included in each case (except for N type).
- Select proper models by enclosure dimensions and capacity of the batteries.
Typical Capacity : CR2032 : 225mAh / CR2450 : 620mAh / CR2477 : 1000mAh
- Suitable for remote controller, wireless key fob, or small tester/device, and more.
- Available in 4 sizes with 8 models and selectable in 2 different color types (Black or White).

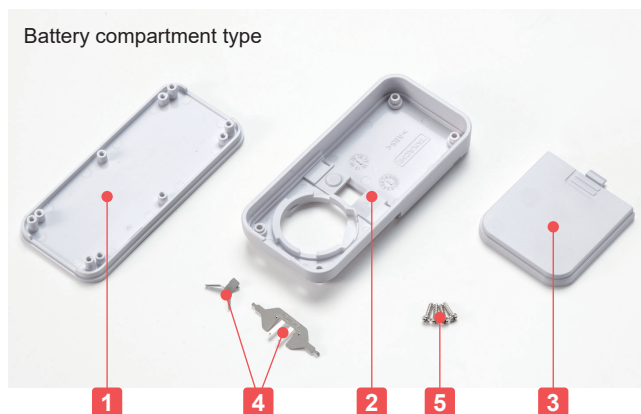
Technical Data

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

No battery compartment type



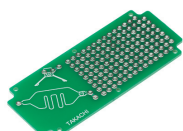
Battery compartment type



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 sets (CS115)	Stainless steel SUS304	Nickel plated
5	Self-tapping screw	4	Steel M1.6-6	Nickel plated • Black trivalent chromate

Accessories (Optional parts)



Exclusive PCB CSPB series
See page 22



Strap STPS series
See page 34



PCB mounting screw EM-1.6
See page 398



TORX screw MR1.6-6S
See page 398



Neodymium magnet
NMG series
See page 392

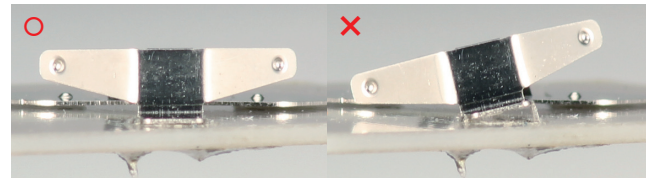
Coin Battery Contact Installation Steps



- Exclusive PCB is available as an optional part. See page 22 for more details. Refer to drawings on page 22 for suitable PCB dimensions and screw hole layout.
- Battery contact parts are sold separately in case of damage or loss. See our website (CST series) for details.

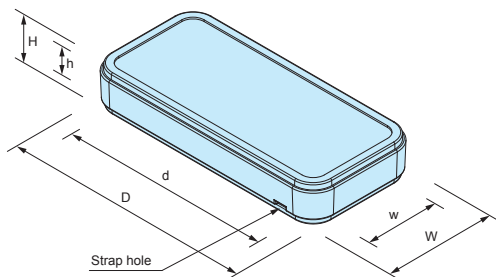
CAUTION

- When installing the battery terminal, make sure that it is parallel to the PCB. The battery may become stuck if installed at an angle. In addition, when mounting PCB, use a 1mm PCB. Please note batteries cannot be used with PCB thicker than 1mm.



CS dimensions

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

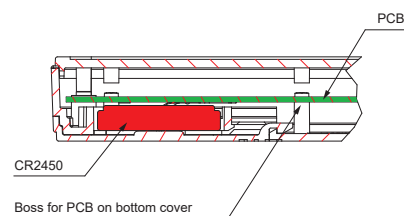


Type	CS N Type	CS75/90	CS100 ^{*1}	CS115
Battery compartment	None	CR2032 × 1	CR2450 × 1 or CR2477 ^{*2} × 1	CR2032 × 2

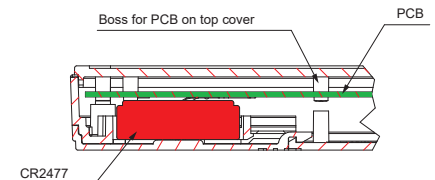
^{*1} CS100 battery type varies by PCB placement: CR2450 with PCB on bottom cover, or CR2477 with PCB on top cover. See below for the details.

^{*2} Not compatible with Renata CR2477N battery.

CR2450 × 1 on CS100 (PCB on bottom cover)



CR2477 × 1 on CS100 (PCB on top cover)



^{*Not compatible with Renata CR2477N battery}

Product no. / Details

Product no.		External dimensions			Internal dimensions			Battery compartment	Weight (g)
● Black	● White	W	H	D	w	h	d		
CS 75N-B	CS 75N-W	35	12	75	26.6	5.3	59	None	12
CS 75 -B	CS 75 -W	35	12	75	26.6	5.3	25.4	CR2032×1	13
CS 90N-B	CS 90N-W	45	12	90	36.6	5.3	74	None	18
CS 90 -B	CS 90 -W	45	12	90	36.6	5.3	40.4	CR2032×1	20
CS100N-B	CS100N-W	50	16.8	100	41.6	10.1	82	None	24
CS100 -B	CS100 -W	50	16.8	100	44.1	6.8	46	CR2450×1 / CR2477×1	26
CS115N-B	CS115N-W	63	12	115	54.6	5.3	98	None	30
CS115 -B	CS115 -W	63	12	115	54.6	5.3	64.9	CR2032×2	33

CSSC series

SILICONE COVER for CS

Silicone Cover Type

Code	CL Closed	OP Open
Shape		

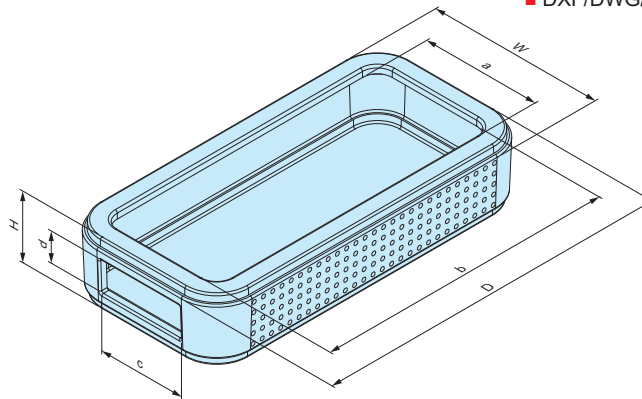
- 2 types of silicone cover which have with (Open) and without (Closed) rectangular cutout on the front side; selectable in 5 different colors.

Color Type

Code	Orange	Green	Cyan	Light gray	Black
Color					

CSSC dimensions

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



Components

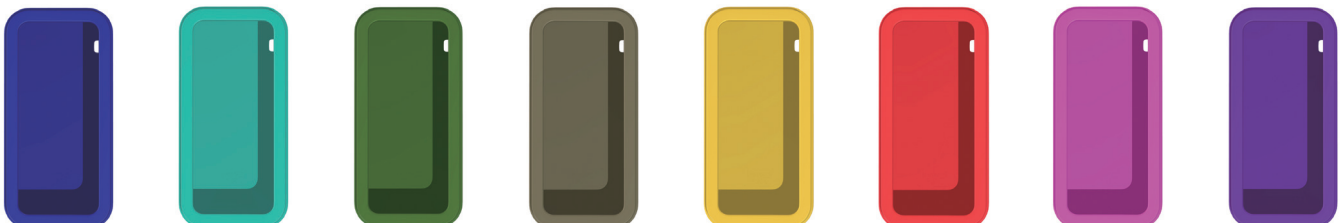
Part name	Material	Color
Silicone cover	Silicone	Orange • Green • Cyan • Light gray • Black

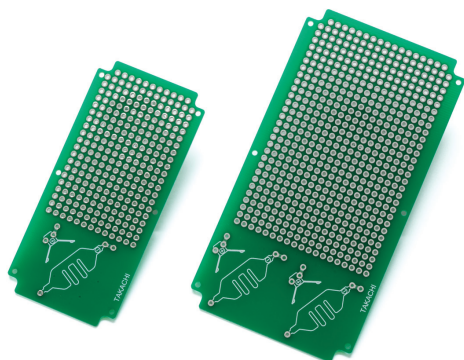
Product no. / Details

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

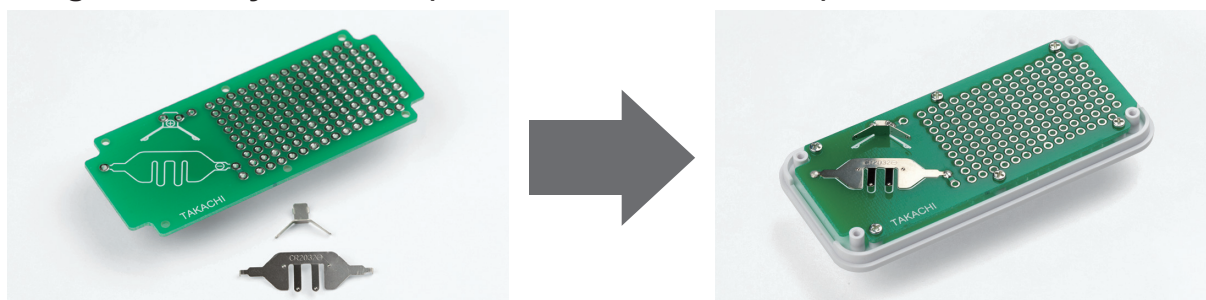
Product no.	W	H	D	a	b	c	d	Suitable models	Weight (g)
CSSC 75-CL-□	38.6	15.5	78.6	28.4	68.4	—	—	CS 75	12
CSSC 75-OP-□	38.6	15.5	78.6	28.4	68.4	20	7.4	CS 75	12
CSSC 90-CL-□	48.6	15.5	93.6	37.4	82.4	—	—	CS 90	18
CSSC 90-OP-□	48.6	15.5	93.6	37.4	82.4	30	7.4	CS 90	17
CSSC100-CL-□	54.1	20.8	104.1	42.4	92.4	—	—	CS100	28
CSSC100-OP-□	54.1	20.8	104.1	42.4	92.4	33	12.2	CS100	27
CSSC115-CL-□	67.1	16	119.1	55.4	107.4	—	—	CS115	32
CSSC115-OP-□	67.1	16	119.1	55.4	107.4	45	7.4	CS115	31

- Custom color is available from just 1 pc. For 500 pcs or more, manufacture costs will be similar to a standard color. Please inquire for more details. For custom color order, please specify **PANTONE®** color code.



CSPB series**EXCLUSIVE PCB for CS • CSS**

- Exclusive PCB for CS and CSS series.
- 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.

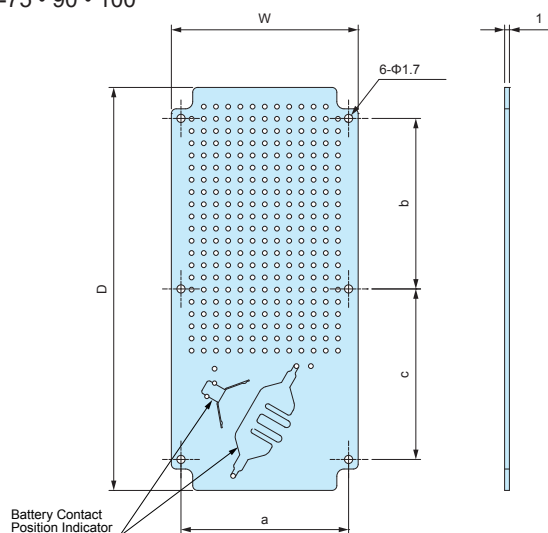
Soldering the battery contacts (included with each case) onto the PCB**Components**

Part name	Pcs	Material	Color / 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

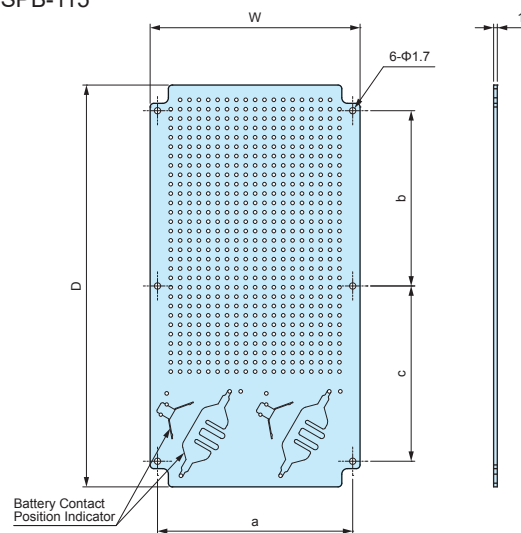
CSPB dimensions

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

CSPB-75 • 90 • 100



CSPB-115



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

Product no. / Details

Product no.	W	D	a	b	c	Suitable models
CSPB- 75	28.9	68.9	24.9	28	28	CSS 75 • CS 75
CSPB- 90	38.9	83.9	34.9	35.5	35.5	CSS 90 • CS 90
CSPB-100	45	94	38	31	38	CSS100 • CS100
CSPB-115	56.9	108.9	52.9	47.5	47.5	CSS115 • CS115

PS series PORTABLE PLASTIC CASE

Suitable for wireless device, remote controller, key fob, and more.

Available in 4 different sizes with 4 selectable colors.

Portable SIGFOX Multi-Sensor System



Multi-sensor system which detects motion, temperature, humidity and sound. Warnings are sent to the owner, or 3rd parties via SMS, X (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)



Example: Locating your car in a large parking area

APPLICATION EXAMPLE

Remote Controller for Undercover Investigation



Re-Mote Suite-IoT Development Platform



Beacon Receiver



GPS Tracker with Temperature Data Logger



Portable Radiation Detector



Remote Controller for Metal Sensor Reel



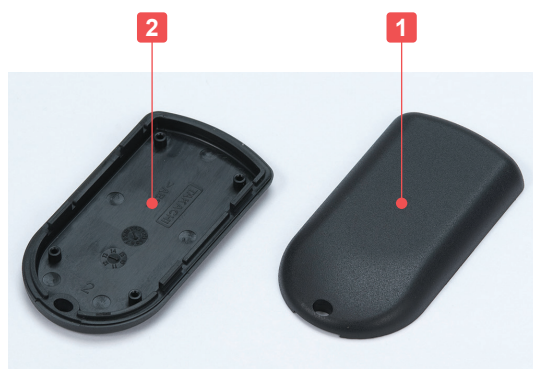
LPWA Receiver





Technical Data

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



- Simple snap-in case without screws.
- Comfortable shape and hold.
- 4 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	Rounded cover	ABS UL94HB	White • Black • Cobalt • Green
2	Flat cover	ABS UL94HB	White • Black • Cobalt • Green

Product no. / Details

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

Accessories (Optional parts)



PCB mounting screw EM-1.6
See page 398



Strap STPS series
See page 34

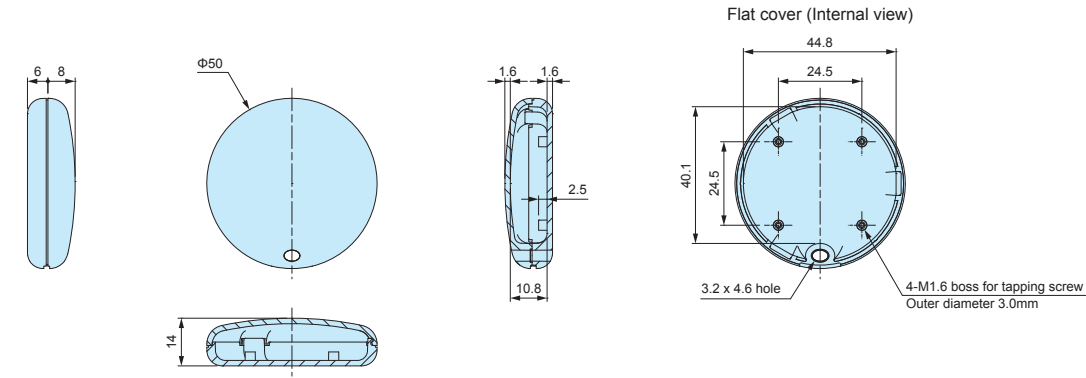


Neodymium magnet NMG series
See page 392

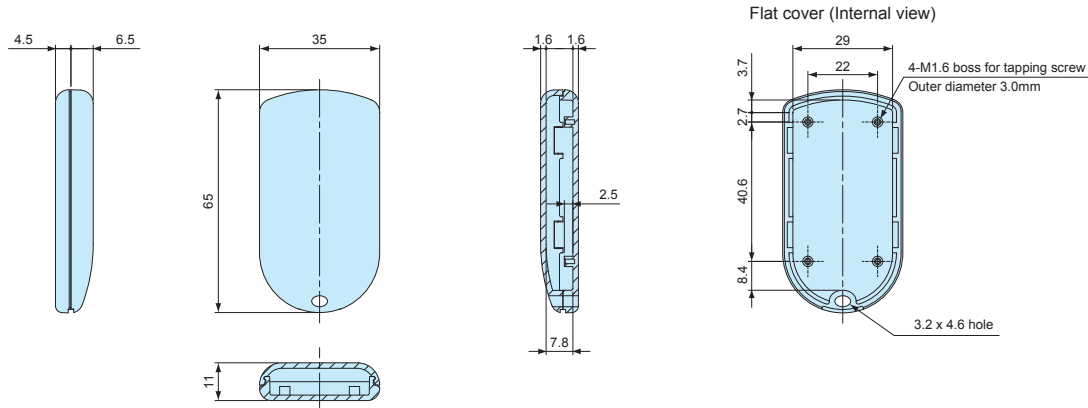
PS dimensions

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

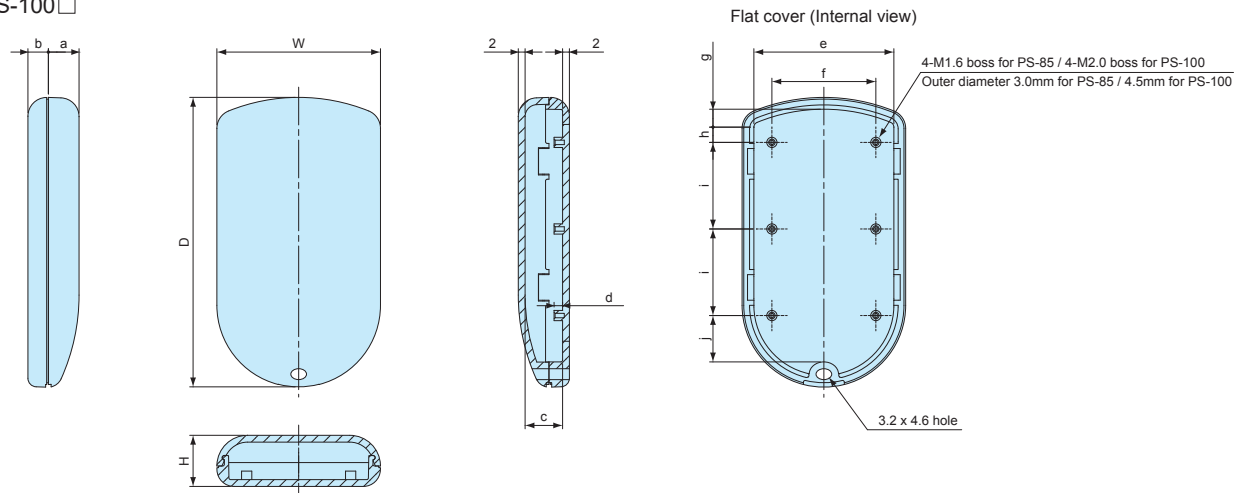
PS-50□



PS-65□

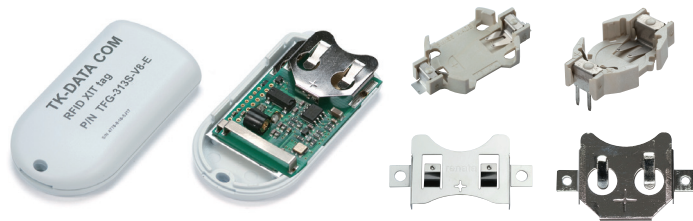


PS-85□ / PS-100□



Product no.	W	H	D	a	b	c	d	e	f	g	h	i	j
PS- 85□	48	15	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

Accessories (Optional parts) - coin cell battery holders



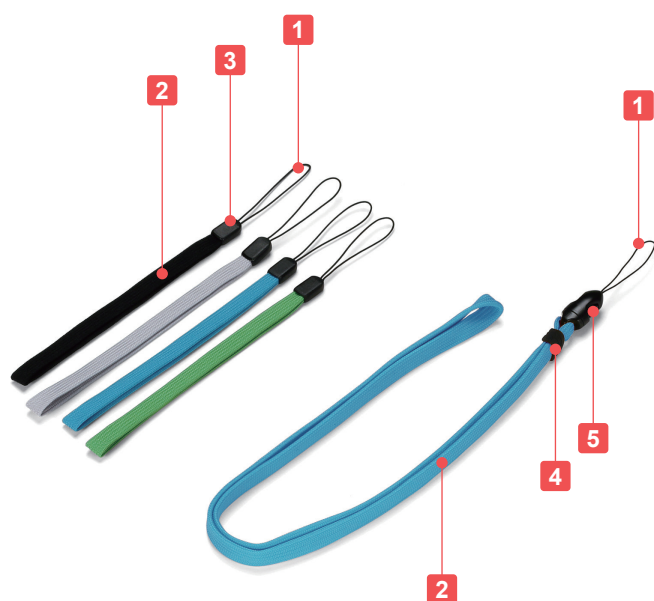
- Various coin cell battery holders can be utilized.
See coin cell battery holders on our website for more details.
Refer to the chart for compatible holders.
- Chart on the right is based upon mounting onto a 1.0mm thick PCB.
- Please note that depending on the mounting location, PCB may not be able to be properly affixed on.

COMPATIBLE COIN CELL BATTERY HOLDERS CHART

Product no.	Compatible coin cell battery holders
PS- 50□	SMTU1220(G) / 1225 / 1632(G) / 2-2016 / 2032(G) PB621 / SMTM1632 / 2032 BK-879 / 5067 / 888
PS- 65□	BK-879 / 5091 / 5067 / 888 PB621 / SMTM1225 / 1632 / 2032
PS- 85□	PB621 / SMTM1632 / 2032 BK-879 / 5091 / 5067 / 888 SMTU1220(G) / 1225 / 1632(G) / 2-2016 / 2032(G) / 2430
PS-100□	PB621 / SMTM1632 / 2032 BK-879 / 5091 / 5067 / 888 SMTU1220(G) / 1225 / 1632(G) / 2-2016 / 2032(G) / 2430 / 2450 BCR20H4 / BCR20H5

STPS series

STRAP



APPLICATION EXAMPLE

Wrist strap (STPS-140G)



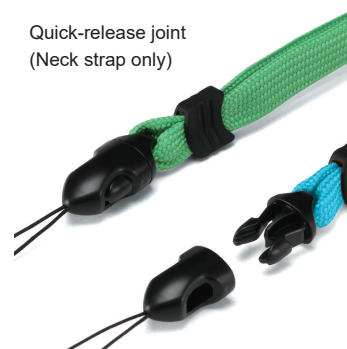
Neck strap (STPS-450C)



- Colorful and sturdy straps best used with CSS, CS, PS, and WC series.
- Wrist and Neck straps are available in 4 unique colors.
- Neck strap comes with a quick-release joint, making removal and attachment quick and easy.

Color Type

Code	G Green	C Cyan	L Light gray	B Black
Color				

Quick-release joint
(Neck strap only)

Components

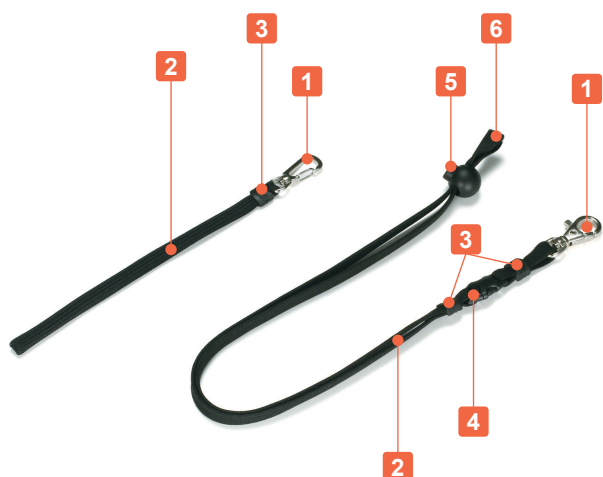
No.	Part name	Material	Color
1	String	Polyester	Black
2	Strap	Polyester	Green • Cyan • Light gray • Black
3	Cap (wrist strap only)	ABS	Black
4	Clamp (neck strap only)	Elastomer	Black
5	Joint (neck strap only)	Polyacetal	Black

Product no. / Details

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

STP series

STRAP



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

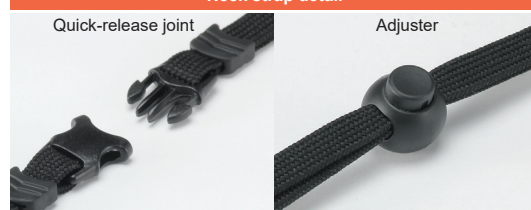
Wrist strap (STP-200)



Neck strap (STP-450)



Neck strap detail



- 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. / Details

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

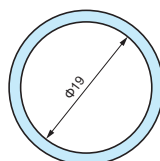
CR-20

KEY RING

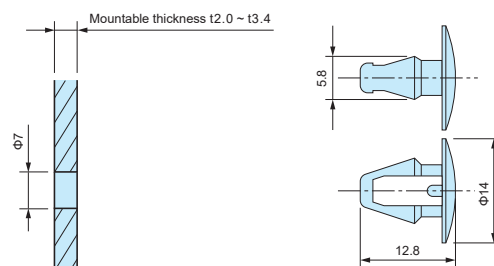


- Hole milling is required for case installation.

CR-20 dimensions



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



Components

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

Product no. / Details

Product no.	Ring Φ	Installation hole	Mounting thickness
CR-20	Φ19	Φ7	t2.0 ~ t3.4

WSC series

IP67 SLOPED PLASTIC CASE

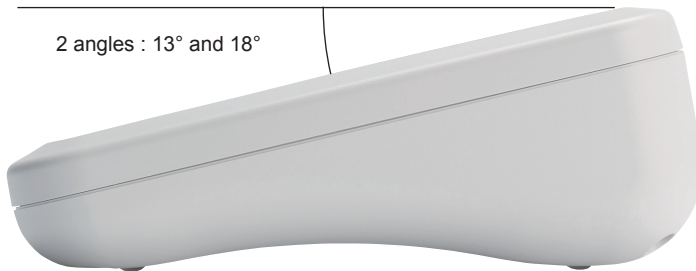


Ergonomic design and streamlined shape

Best suited for desktop operation with its sloped surface.

2 different inclined angles, 13° and 18° are available to select for various operating environments.

Streamlined shape enables the unit to be gripped better when used as a handheld instrument.



2 angles : 13° and 18°

Photo : 13° type



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

High elasticity and good durability for maintaining waterproofing capability.

Built-in insert nut use for long-lasting protection even after frequent opening and closing.



APPLICATION EXAMPLE

Medical Measurement Device • Medical Controller



Transmitter • Network Equipment



RFID Card Reader



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



Information on waterproofing after hole milling for switches

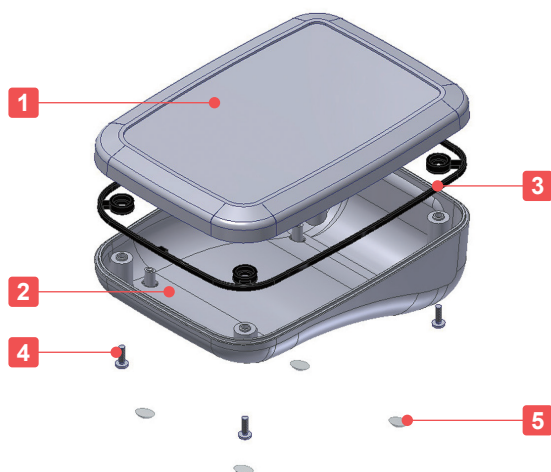
The waterproof performance will be lost once hole or cutout is machined on an IP rated enclosure. To ensure it remains waterproof after hole/cutout machining, IP rated membrane pad or overlay is required.



Information on affixing of cables into waterproof enclosures

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





Technical Data

Protection class : IP67
 Operating temperature : -10°C ~ +60°C
 Recommended torque : 0.2 ~ 0.3N • m

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

Components

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

Accessories (Optional parts)



PCB mounting screw EM series
See page 398



Adhesive standoff AST series
See page 394



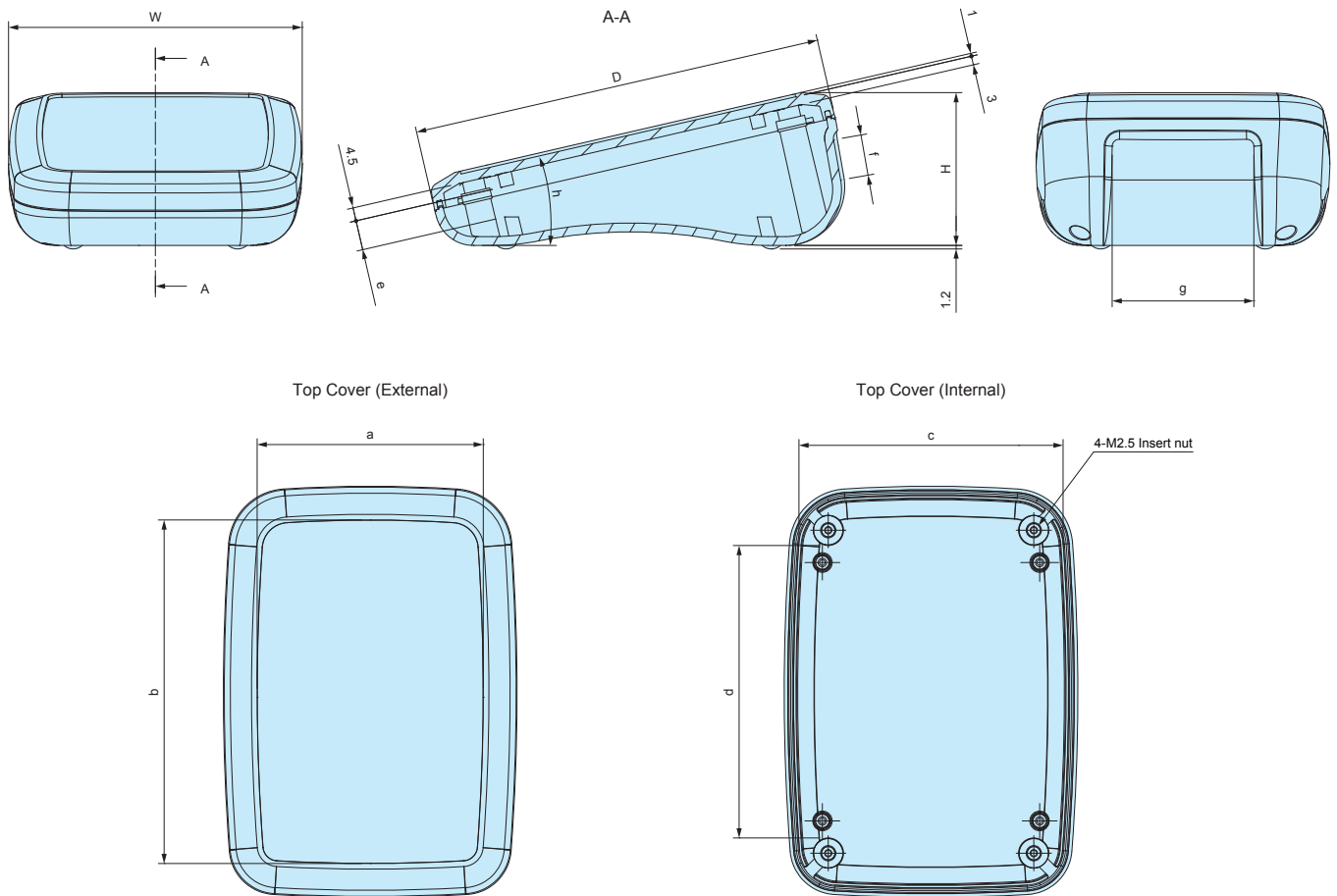
TORX screw MR series
See page 398



Cable gland
See page 181 ~ 193

WSC dimensions

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



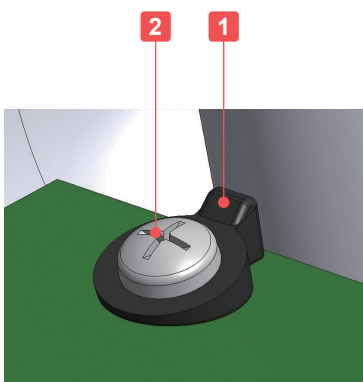
Product no. / Details

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

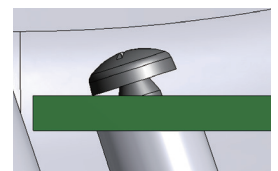
Accessories (Optional parts)

WSP-M2.3

INCLINED SPACER for WSC



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



Components

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

■ Recommended torque : 0.1N • m

Product no. / Details

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

SHOCKPROOF PLASTIC ENCLOSURE

Ensure your industrial tablet, measuring equipment and controllers are protected with the silicone corner guards

PFG series



6 DIFFERENT COLOR COMBINATIONS AVAILABLE

3 corner guard colors and 2 plastic box colors available for a total of 6 color combinations to choose from. Different color combinations can be freely chosen depending on your purpose of use.

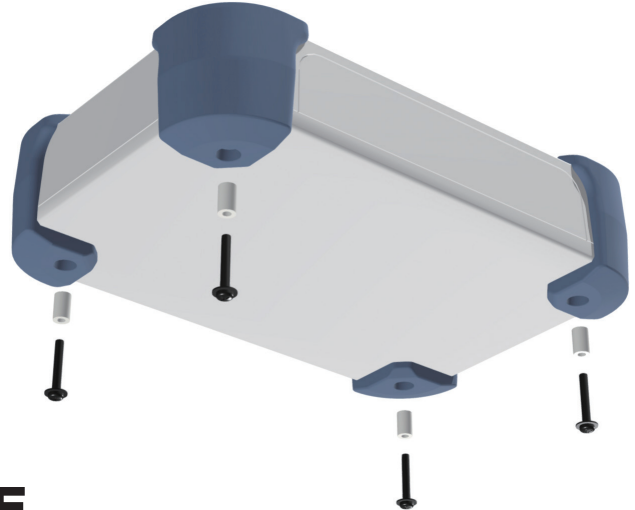


HOW TO ASSEMBLE CORNER GUARDS

1. Insert corner guards into designated holes on the top corners.



2. Insert spacers into the holes on the bottom of corner guards. Fasten bottom base and corner guards together with screws.



APPLICATION EXAMPLE

Industrial Tablet



Medical Equipment



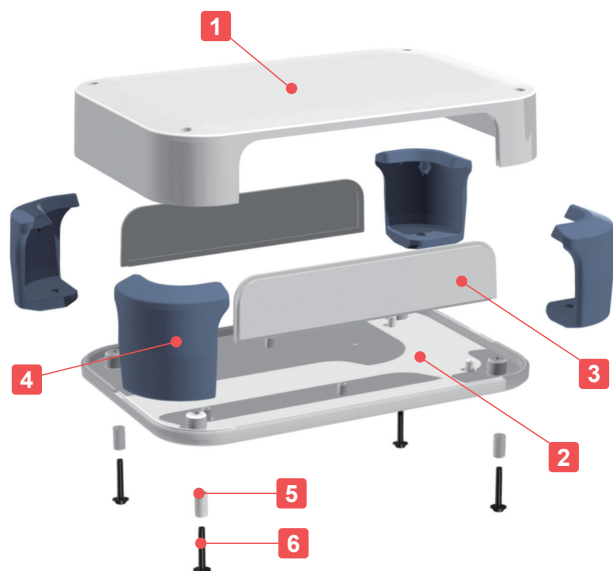
Network Device





Technical Data

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



- Network plastic box attached with shockproof silicone corner guards.
- Suitable for industrial tablet, measuring equipment, controller and various other applications.
- A total of 6 color combinations available with 3 corner guard colors - Dark gray, Emerald, Indigo - and 2 plastic box colors - Dark gray and Off-white.

Components

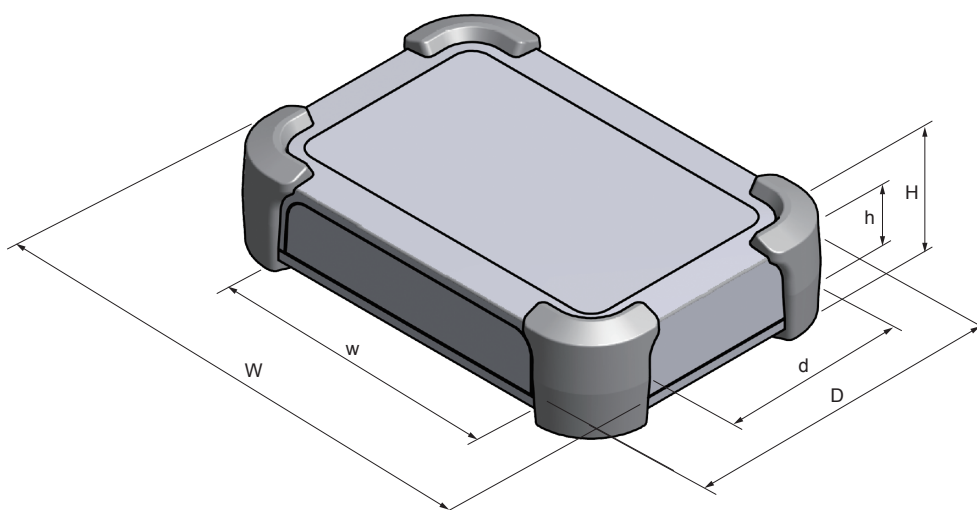
No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	ABS UL94V-0	Off-white • Dark gray
2	Bottom base	1	ABS UL94V-0	Off-white • Dark gray
3	Panel	2	ABS UL94V-0	Off-white • Dark gray
4	Corner guard	4	Silicone	Dark gray • Emerald • Indigo
5	Spacer	4	PA	White
6	Self-tapping screw	4	Steel	Nickel plated

Color Type

Code	Dark gray / Dark gray	Dark gray / Emerald	Dark gray / Indigo
Color			
Code	Off-white / Dark gray	Off-white / Emerald	Off-white / Indigo
Color			

PFG dimensions

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



Product no. / Details

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

Product no.	External dimensions			Internal dimensions			Weight (g)
	W	H	D	w	h	d	
PFG20-4-13 □□	208 (200)	51 (40)	143 (135)	151.6	27.3	124.4	346
PFG20-4-20 □□	208 (200)	51 (40)	208 (200)	151.6	27.3	189.4	450
PFG24-6-17 □□	248 (240)	71.5 (60)	173 (165)	187.6	47	153.2	520
PFG24-6-24 □□	248 (240)	71.5 (60)	248 (240)	187.6	47	228.2	696.5

■ () value = enclosure dimension.

Accessories (Optional parts)



Embedded battery box BC series
See page 381 ~ 383



Tapping standoff TPS series
See page 397



PCB mounting screw EM series
See page 398



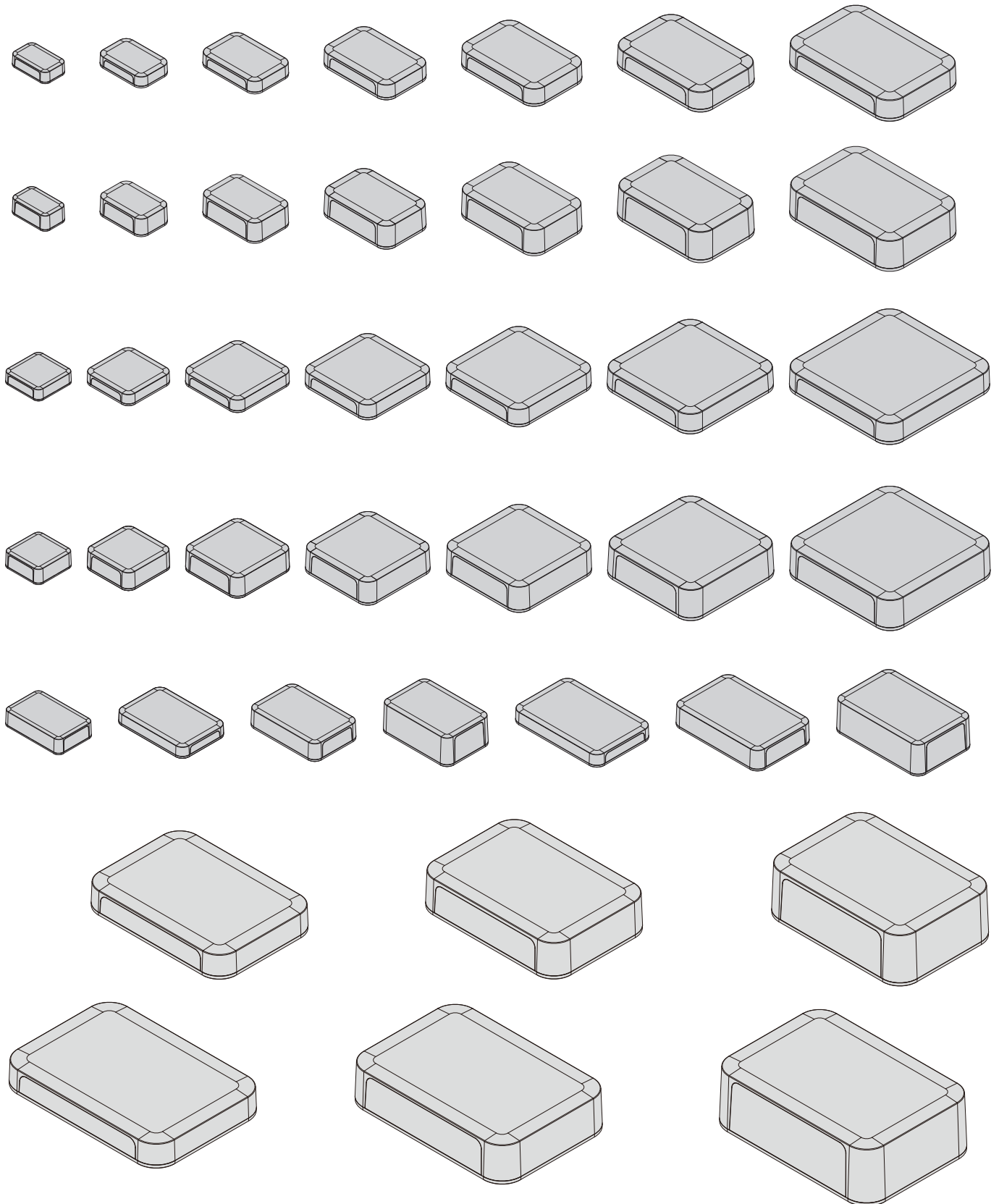
Tilt leg TLW series
See page 239

PF series **FLAT NETWORK CASE**

Huge selection, 41 different sizes are now available.

Suitable for IoT device, data transmitter/receiver, and access point.

From 80 x 50 x 22.5 to 320 x 225 x 100 mm.

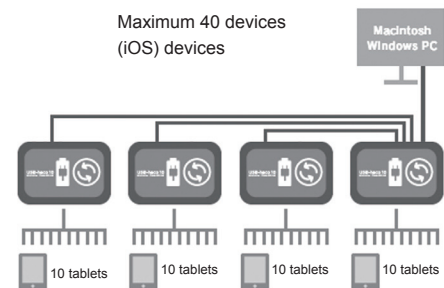


APPLICATION EXAMPLE

WiFi Access Point



USB Power Charging Hub + Data Hub



Simultaneous power charging and data transfer is possible.

Front Door Electric Opener System Controller



USB Hemodynamic Research Device



Multi Channel Data Logger



Storage Battery Monitoring System

Wireless CO₂ Monitoring System



Wireless Home Electronics Controller



Wireless Safety Confirmation System



G4 Flight Tracker



Advanced Trigger Station



iCONSE-T IoT and Sensor Network Training System



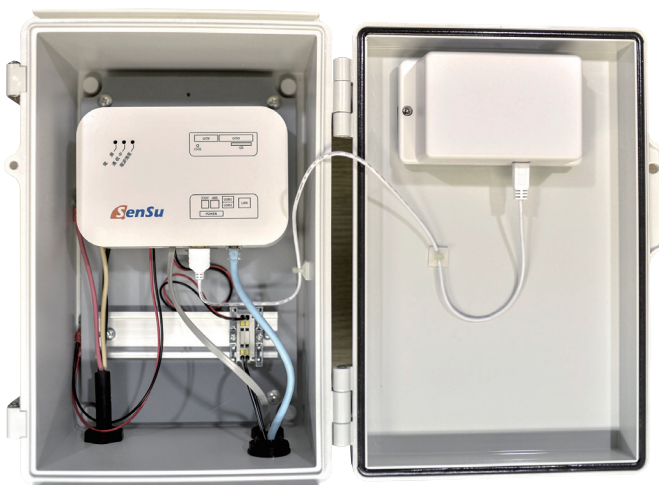
Wireless Network Data Logger



Analog Serial Converter



"SenSu" Communication Unit with Sensor



Modbus Converter

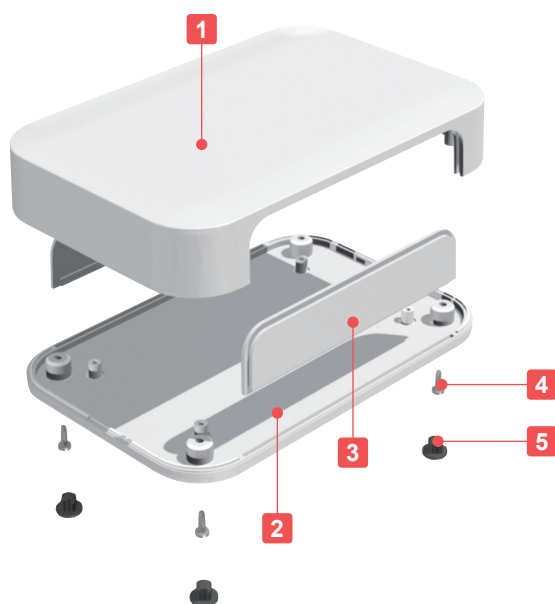




Technical Data

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

- A total of 41 different sizes available for selection.
- Flat designed plastic case with detachable panels.
- Made of flame-resistant ABS UL94V-0 and available in Off-white and Dark gray colors.
- Equipped with built-in bosses for PCB mounting.
- Suitable for Wi-Fi access point, measuring equipment, controller and various other applications.



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 UL94HB	Dark gray

*Rubber feet are not included in PF8-□-5, PF8-□-8, PF8-3-13 models.

Accessories (Optional parts)



Embedded battery box BC series
See page 381 ~ 383



Tapping standoff TPS series
See page 397



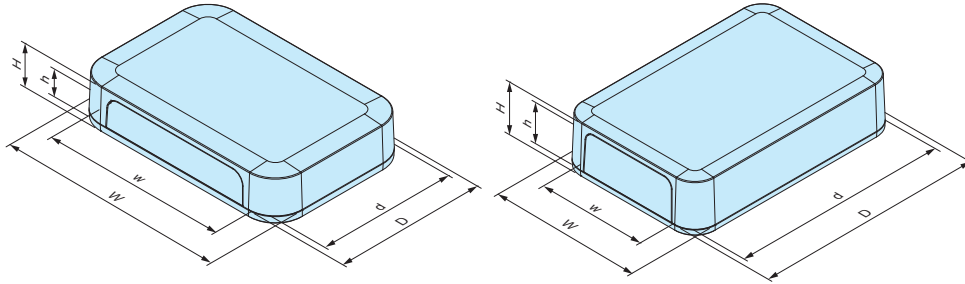
PCB mounting screw EM series
See page 398



Suspension bracket WM series
See page 391

PF dimensions

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



Product no. / Details

Product no.		External dimensions			Internal dimensions			Weight (g)
● Off-white	● Dark gray	W	H	D	w	h	d	
PF 8- 2- 5W	PF 8- 2- 5D	80	22.5	50	55.5	13.5	42.8	36.2
PF 8- 2- 8W	PF 8- 2- 8D	80	22.5	80	55.5	13.5	72.8	53.3
PF 8- 3- 5W	PF 8- 3- 5D	80	30	50	55.5	21	42.3	41.6
PF 8- 3- 8W	PF 8- 3- 8D	80	30	80	55.5	21	72.3	60.1
PF 8- 3-13W	PF 8- 3-13D	80	30	125	55.5	21	117.3	87.3
PF10- 2- 7W	PF10- 2- 7D	100	22.5	67	67.4	11.1	58.4	60
PF10- 2-10W	PF10- 2-10D	100	22.5	100	67.4	11.1	91.4	82.9
PF10- 2-15W	PF10- 2-15D	100	22.5	150	67.4	11.1	141.4	120.2
PF10- 4- 7W	PF10- 4- 7D	100	35	67	67.4	23.6	57.5	65
PF10- 4-10W	PF10- 4-10D	100	35	100	67.4	23.6	90.5	97.1
PF10- 4-15W	PF10- 4-15D	100	35	150	67.4	23.6	140.5	132.6
PF10- 6-15W	PF10- 6-15D	100	55	150	67.4	43.6	139.1	169.1
PF13- 3- 9W	PF13- 3- 9D	125	25	85	92.4	13.5	76.2	90.8
PF13- 3-13W	PF13- 3-13D	125	25	125	92.4	13.5	116.2	127.5
PF13- 3-19W	PF13- 3-19D	125	25	190	92.4	13.5	181.2	186.8
PF13- 4- 9W	PF13- 4- 9D	125	40	85	92.4	28.5	75.2	108.4
PF13- 4-13W	PF13- 4-13D	125	40	125	92.4	28.5	115.2	151.4
PF13- 4-19W	PF13- 4-19D	125	40	190	92.4	28.5	180.2	214.9
PF13- 6-19W	PF13- 6-19D	125	60	190	92.4	48.5	178.8	250.4
PF15- 3-10W	PF15- 3-10D	150	30	100	112.4	17.8	90	145.5
PF15- 3-15W	PF15- 3-15D	150	30	150	112.4	17.8	140	207.5
PF15- 5-10W	PF15- 5-10D	150	45	100	112.4	32.8	88.9	166
PF15- 5-15W	PF15- 5-15D	150	45	150	112.4	32.8	138.9	233.5
PF18- 4-12W	PF18- 4-12D	175	35	120	132.4	22.4	110.3	188.7
PF18- 4-18W	PF18- 4-18D	175	35	175	132.4	22.4	165.3	266.8
PF18- 5-12W	PF18- 5-12D	175	50	120	132.4	37.4	109.3	213.6
PF18- 5-18W	PF18- 5-18D	175	50	175	132.4	37.4	164.3	302.1
PF20- 4-13W	PF20- 4-13D	200	40	135	151.6	27.3	124.4	264
PF20- 4-20W	PF20- 4-20D	200	40	200	151.6	27.3	189.4	368.5
PF20- 6-13W	PF20- 6-13D	200	60	135	151.6	47.3	123	302.5
PF20- 6-20W	PF20- 6-20D	200	60	200	151.6	47.3	188	417
PF24- 4-17W	PF24- 4-17D	240	42.5	165	187.6	29.5	154.5	370.4
PF24- 4-24W	PF24- 4-24D	240	42.5	240	187.6	29.5	229.5	521.4
PF24- 6-17W	PF24- 6-17D	240	60	165	187.6	47	153.2	408.8
PF24- 6-24W	PF24- 6-24D	240	60	240	187.6	47	228.2	568.7
PF28- 5-20W	PF28- 5-20D	280	45	200	223.6	31.4	189.3	564.1
PF28- 7-20W	PF28- 7-20D	280	65	200	223.6	51.4	187.9	618.4
PF28- 9-20W	PF28- 9-20D	280	90	200	223.6	76.4	186.2	709.2
PF32- 5-23W	PF32- 5-23D	320	45	225	259.6	31.3	214.3	697.1
PF32- 7-23W	PF32- 7-23D	320	70	225	259.6	56.3	212.6	782.1
PF32-10-23W	PF32-10-23D	320	100	225	259.6	86.3	210.5	899.8

* H dimension does not include the height of rubber feet. (Rubber feet height = +2mm)

EMC
Shielding

- 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 more.

Technical Data

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

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 397



PCB mounting screw EM series
See page 398



TORX screw MR series
See page 398



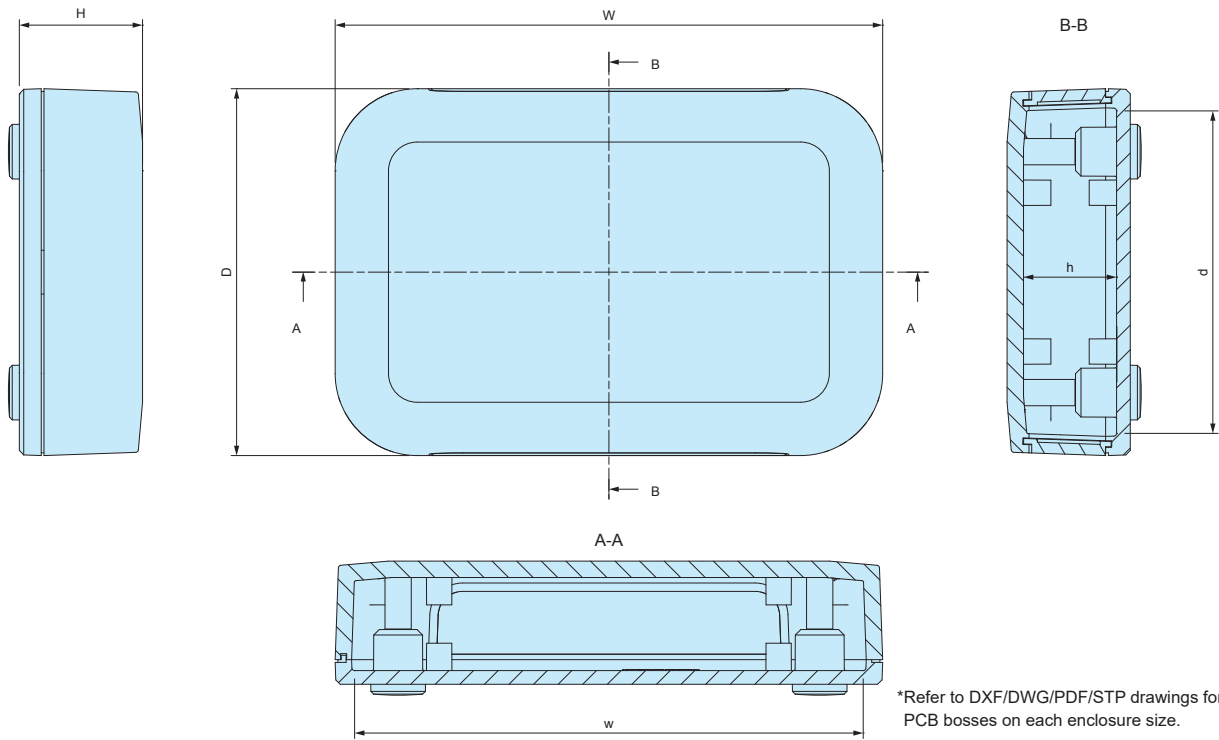
Suspension bracket WM series
See page 391



Embedded battery box BC series
See page 381 ~ 383

PFE dimensions

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



*Refer to DXF/DWG/PDF/STP drawings for number of PCB bosses on each enclosure size.

Product no. / Details

*H dimension does not include the height of rubber feet. (Rubber feet height = +2mm)

Product no.	External dimensions			Internal dimensions			Screw	Weight (g)
	W	H	D	w	h	d		
PFE13-4- 9W	125	40	85	116	75	34.5	M2.5-8 x 4 pcs	114
PFE15-3-10W	150	30	100	142	90	24	M2.5-8 x 4 pcs	152
PFE15-5-15W	150	45	150	141	139	39	M2.5-8 x 4 pcs	244.5
PFE20-4-13W	200	40	135	191.5	124.5	34	M3-8 x 4 pcs	274.5

Accessories (Optional parts)

PFRF series

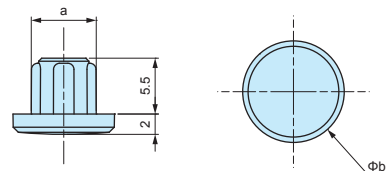
RUBBER FEET for PF • PFE



- Rubber feet for PF • PFE series.
- Inserted into the screw holes on the underside of box.
- Elastomer material is resistant against color migration.
- PF • PFE boxes comes with PFRF rubber feet. Utilize PFRF as spare or replacement.

PFRF dimensions

■ STP drawings available on our website.



Product no. / Details

Product no.	Dimensions		Suitable models	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 PFE13-4-9,15-3-10,15-5-15	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 PFE20-4-13	Elastomer	Dark gray	4

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 9 sizes and selectable in 8 different color combinations. Suitable for measuring instruments, wireless communication devices, portable controller, data logger, and more.

APPLICATION EXAMPLE

Digital Power Amplifier



GPS Data Logger



6 Channel Data Logger



Battery Voltage Recorder



Tester for Photovoltaic System



Solar Cell Bypass Diode Checker



PV Insulation Resistance Checker for Solar Cell



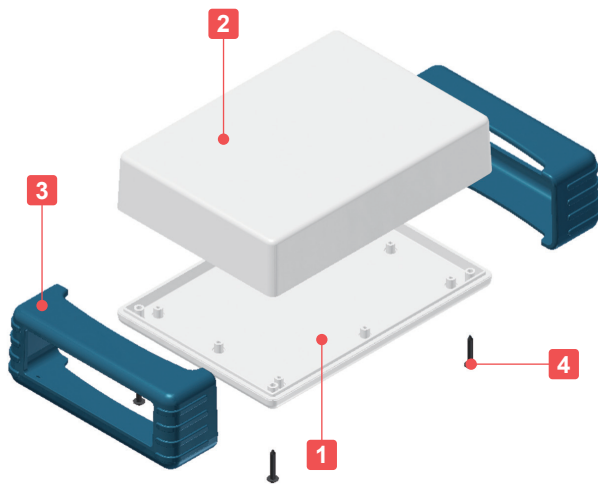
Vibration Monitor





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 9 sizes and selectable in 8 different color combinations.
- Enclosure is in B (Black - ABS UL94HB) and W (Off-white - ABS UL94V-0) model.
- Plastic case and protective silicone with screw fastening.
*Note: utilize screws packaged with the silicone protectors for assembly.
- Use caution when assembling. Overtightening may damage the enclosure and silicone protectors.
- Custom color silicone protector is available from just 1 set. For 500 sets or more, manufacturing costs will be similar to a standard color. Please inquire for more details.

Components

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

Accessories (Optional parts)



Embedded battery box BC series
See page 381 ~ 383



Adhesive standoff AST series
See page 394



Tapping standoff TPS series
See page 397



PCB mounting screw EM series
See page 398

Color Type

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

ABS UL94HB (Black enclosure)

Product no. / Details

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

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

■ () value = enclosure dimension.

ABS UL94V-0 (Off-white enclosure)

Product no. / Details

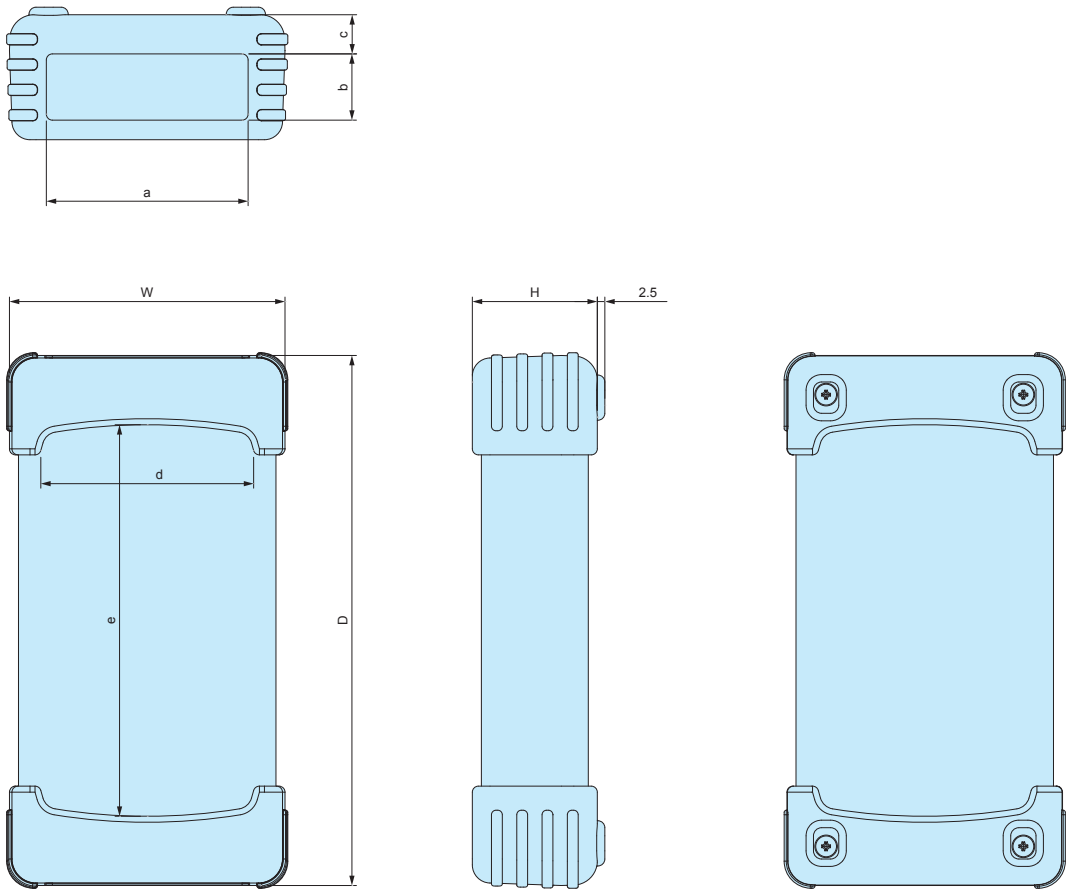
■ Please suffix color code at the end of the product number.

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

■ () value = enclosure dimension.

TWS dimensions

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

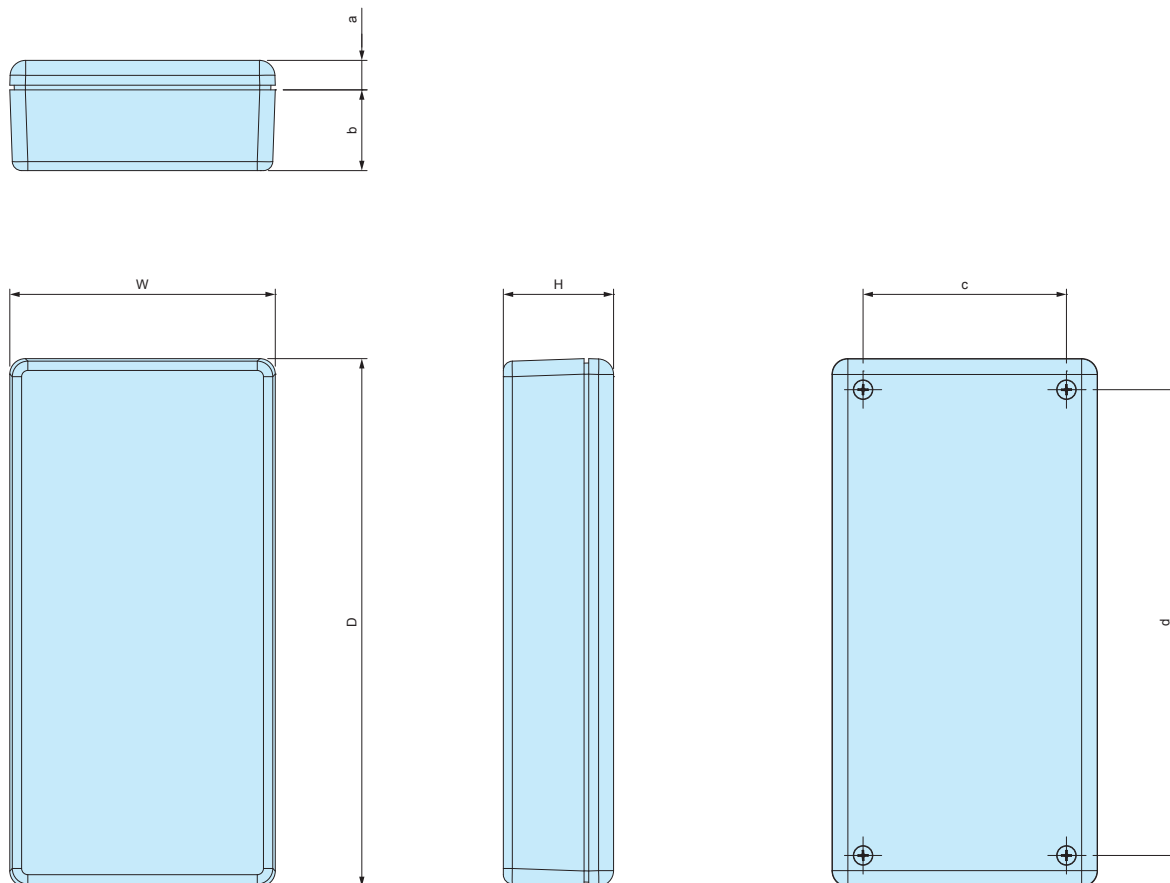


■ Please suffix color code at the end of the product number.

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
TWS13-5-13□□	131	51	131	101	29.5	13.5	104	76
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

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



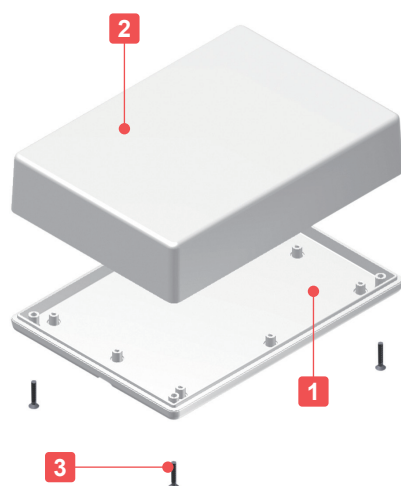
■ Please suffix color code at the end of the product number.

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
TWS13-5-13□□	125	45	125	8.5	36.5	107	107
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.
- 26 sizes are available in 2 colors; Black (ABS UL94HB) and Off-white (ABS UL94V-0).
- Suitable for measuring instruments, testing devices, wireless communication devices, medical devices, and more.

Components

No.	Part name	Pcs	Material : Color / Finish
1	Cover	1	TW : ABSUL94HB / Black
			TWN : ABS UL94V-0 / Off-white
2	Bottom base	1	TW : ABSUL94HB / Black
			TWN : ABS UL94V-0 / Off-white
3	Self-tapping screw	2 or 4	TW : Steel / Black trivalent chromate
			TWN : Steel / Nickel plated

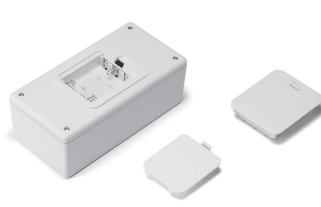
Accessories (Optional parts)



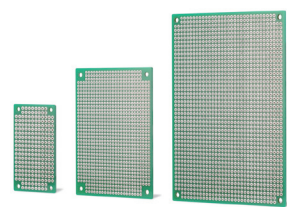
Silicone band SIB series
See page 90



Suspension bracket WM series
See page 391



Embedded battery box BC series
See page 381 ~ 383



Universal PCB PCB series
See website



Adhesive standoff AST series
See page 394



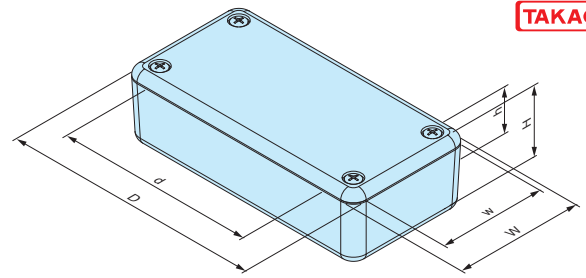
PCB mounting screw EM series
See page 398



Tapping standoff TPS series
See page 397

Color Type

Series	Code	Color	Screw
TW	B	Black	Black trivalent chromate
TWN	W	Off-white	Nickel plated



TW series (ABS UL94HB)

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

Product no. / Details

Product no.	External dimensions			Internal dimensions			Screw (Self-tapping flat head)	Weight (g)
	W	H	D	w	h	d		
TW 4-2- 5B	35	20	50	28.2	12	32.6	M2.6-12 x 2 pcs	13.5
TW 4-2- 6B	35	20	60	28.2	12	42.6	M2.6-12 x 2 pcs	15.5
TW 4-2- 8B	40.3	20	80.3	33.5	12	62.5	M2.6-12 x 2 pcs	22
TW 5-2- 5B	50	15	50	42.8	7	31.9	M2.6-12 x 4 pcs	18
TW 5-2- 7B	50	15	70	43.2	7	52.9	M2.6-12 x 4 pcs	22
TW 5-3- 5B	50	25	50	42.8	17	31.9	M2.6-12 x 4 pcs	22
TW 5-3- 7B	50	27.5	70	43.2	19.5	52.9	M2.6-12 x 4 pcs	29
TW 5-3- 9B	45	25	90	37.7	16	69.4	M3-12 x 4 pcs	30.5
TW 5-3-10B	50	30	100	42.4	20.8	80.8	M2.6-12 x 4 pcs	41.5
TW 5-4- 7B	50	40	70	42.5	32	52.9	M2.6-12 x 4 pcs	35
TW 7-2-11B	70	20	105	61.2	10.5	83	M2.6-14 x 4 pcs	56.5
TW 7-3-13B	65	25.6	130	55.3	14.3	105	M3-16 x 4 pcs	76
TW 7-4-11B	70	35	105	61.2	25.5	83	M2.6-14 x 4 pcs	70
TW 7-5-11B	70	50	105	61.1	40.5	83	M2.6-14 x 4 pcs	83
TW 7-5-13B	65	50.1	130	55.3	38.8	105	M3-16 x 4 pcs	100
TW 8-2- 8B	80	20	80	71.6	10.5	59	M2.6-12 x 4 pcs	49
TW 8-4- 8B	80	40	80	71.6	30.5	59	M2.6-12 x 4 pcs	65
TW 9-4-17B	85.5	35.5	170	75.7	24	143	M3-16 x 4 pcs	133
TW 9-6-17B	85.5	60.5	170	75.7	49	143	M3-16 x 4 pcs	168
TW11-5-22B	110	45.3	220	100.1	33.8	191	M3-16 x 4 pcs	223
TW11-8-22B	110	75.3	220	99.3	63.8	191	M3-16 x 4 pcs	277
TW13-3-13B	125	25	125	114.5	13.7	100	M3-16 x 4 pcs	135
TW13-3-18B	125	25	175	114.5	13.7	148	M3-16 x 4 pcs	184.5
TW13-5-13B	125	45	125	114.5	33.7	100	M3-16 x 4 pcs	165.5
TW13-5-18B	125	45	175	114.5	33.7	148	M3-16 x 4 pcs	218
TW13-7-18B	125	65	175	114.2	53.7	148	M3-16 x 4 pcs	254

TWN series (ABS UL94V-0)

Product no. / Details

Product no.	External dimensions			Internal dimensions			Screw (Self-tapping flat head)	Weight (g)
	W	H	D	w	h	d		
TWN 4-2- 5W	35	20	50	28.2	12	32.6	M2.6-12 x 2 pcs	16.5
TWN 4-2- 6W	35	20	60	28.2	12	42.6	M2.6-12 x 2 pcs	18
TWN 4-2- 8W	40.3	20	80.3	33.5	12	62.5	M2.6-12 x 2 pcs	26
TWN 5-2- 5W	50	15	50	42.8	7	31.9	M2.6-12 x 4 pcs	20
TWN 5-2- 7W	50	15	70	43.2	7	52.9	M2.6-12 x 4 pcs	24.5
TWN 5-3- 5W	50	25	50	42.8	17	31.9	M2.6-12 x 4 pcs	26
TWN 5-3- 7W	50	27.5	70	43.2	19.5	52.9	M2.6-12 x 4 pcs	33
TWN 5-3- 9W	45	25	90	37.7	16	69.4	M3-16 x 4 pcs	35
TWN 5-3-10W	50	30	100	42.4	20.8	80.8	M2.6-12 x 4 pcs	46.5
TWN 5-4- 7W	50	40	70	42.5	32	52.9	M2.6-12 x 4 pcs	39.5
TWN 7-2-11W	70	20	105	61.2	10.5	83	M2.6-14 x 4 pcs	64.5
TWN 7-3-13W	65	25.6	130	55.3	14.3	105	M3-16 x 4 pcs	85
TWN 7-4-11W	70	35	105	61.2	25.5	83	M2.6-14 x 4 pcs	80
TWN 7-5-11W	70	50	105	61.1	40.5	83	M2.6-14 x 4 pcs	94.5
TWN 7-5-13W	65	50.1	130	55.3	38.8	105	M3-16 x 4 pcs	115.5
TWN 8-2- 8W	80	20	80	71.6	10.5	59	M2.6-12 x 4 pcs	55.5
TWN 8-4- 8W	80	40	80	71.6	30.5	59	M2.6-12 x 4 pcs	75
TWN 9-4-17W	85.5	35.5	170	75.7	24	143	M3-16 x 4 pcs	151
TWN 9-6-17W	85.5	60.5	170	75.7	49	143	M3-16 x 4 pcs	191
TWN11-5-22W	110	45.3	220	100.1	33.8	191	M3-16 x 4 pcs	254
TWN11-8-22W	110	75.3	220	99.3	63.8	191	M3-16 x 4 pcs	316
TWN13-3-13W	125	25	125	114.5	13.7	100	M3-16 x 4 pcs	156.5
TWN13-3-18W	125	25	175	114.5	13.7	148	M3-16 x 4 pcs	206.5
TWN13-5-13W	125	45	125	114.5	33.7	100	M3-16 x 4 pcs	190
TWN13-5-18W	125	45	175	114.5	33.7	148	M3-16 x 4 pcs	249
TWN13-7-18W	125	65	175	114.2	53.7	148	M3-16 x 4 pcs	290.5

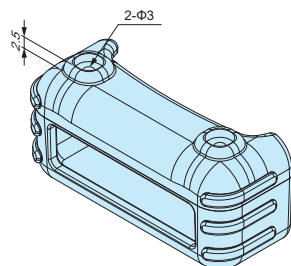
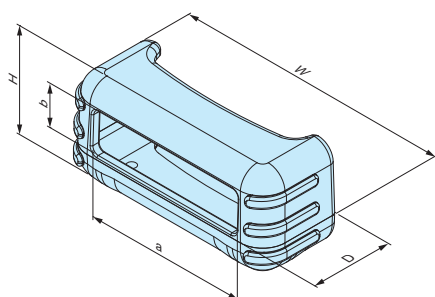
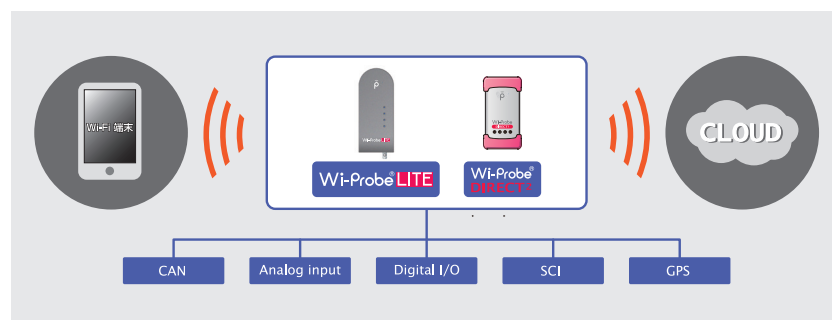
TWSC series**SILICONE PROTECTOR for TW•TWN****Color Type**

Code	Y Yellow	N Navy	L Light gray	B Black
Color				

- Silicone Protector for TW and TWN series. Selectable in 4 colors.
- Available as a set of 2 pcs.
- Use caution when assembling. Overtightening may damage the enclosure and silicone protectors.

TWSC dimensions

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

**APPLICATION EXAMPLE****Wi-Probe DIRECT2 Monitoring Device**

*Pink shown above is custom color.

Components

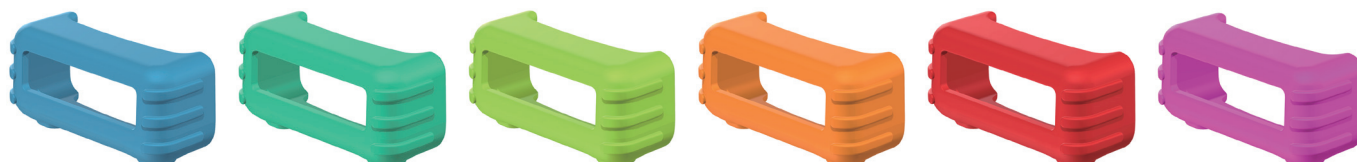
Part name	Pcs	Material	Color / Finish
Silicone protector	1 set (2 pcs)	Silicone	Yellow • Navy • Light gray • Black
Self-tapping screw	4	Steel M3-20	Black trivalent chromate

Product no. / Details

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

Product no.	W	H	D	a	b	Suitable models	Weight (g)
TWSC 7-3□	71	32	27	52	13.5	TW • TWN 7-3-13	41
TWSC 7-5□	71	56	27	52	37.5	TW • TWN 7-5-13	47.5
TWSC 9-4□	91.5	41.5	33	67	22	TW • TWN 9-4-17	60
TWSC 9-6□	91.5	66.5	33	67	46.5	TW • TWN 9-6-17	75
TWSC11-5□	116	51.5	40	80	29	TW • TWN11-5-22	102.5
TWSC11-8□	116	81.5	40	80	58	TW • TWN11-8-22	122
TWSC13-5□	131	51	38	101	29.5	TW • TWN13-5-13 TW • TWN13-5-18	104
TWSC13-7□	131	71	38	101	48.5	TW • TWN13-7-18	117

- Custom color is available from just 1 set. For 500 sets or more, manufacturing costs will be similar to a standard color. Please inquire for more details. For custom color order, please specify **PANTONE®** color code.



SIB series**SILICONE BAND**

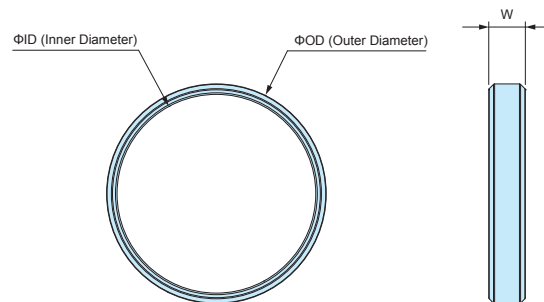
Utilization example



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

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. / Details

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

Product no.	W	ID	OD	Suitable models	Weight (g)
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
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
SIB-58□	8	58	63	TW • TWN7-5-11 • 7-5-13 • 8-4-8 • 9-4-17	10
SIB-72□	10	72	77	TW • TWN9 -6-17 • 11-5-22 • 11-8-22 • 13-3-13 • 13-5-13 13-3-18 • 13-5-18 • 13-7-18	14

WPMB-M4-3 series

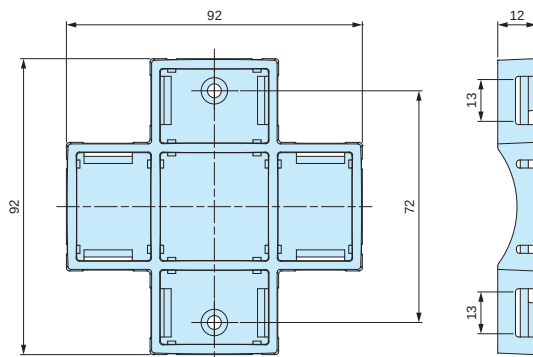
POLE MOUNTING BRACKET



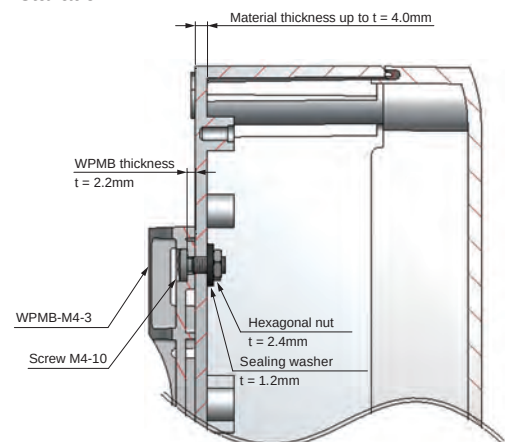
- Pole mount bracket made from weather resistant ASA material.
- Suitable for both vertical and horizontal mounting.
- IPX7 protection can be maintained through the use of sealing washers.
- Hole milling is required for bracket installation.
- Pole mount is possible with the use of PKB series mounting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

WPMB-M4-3 dimensions

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



Installation



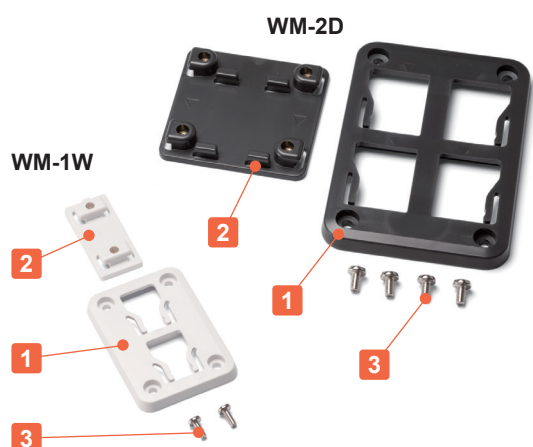
Components

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

Product no. / Dimensions

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

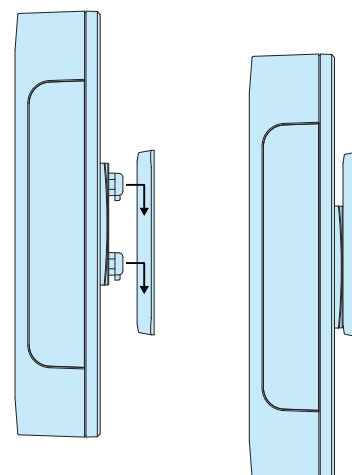
■ Recommended torque listed is for reference only; actual may differ. Assemble after testing torque.

WM series**SUSPENSION BRACKET**

Installation example



How to install



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

Technical Data

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

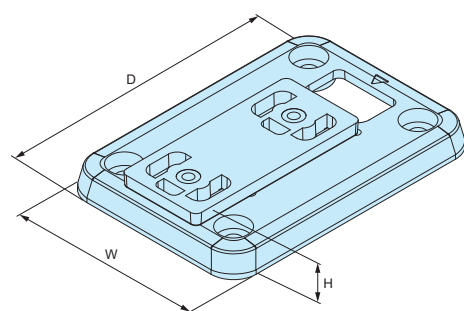
* The max load values listed are static load values only. Use caution when handling.

Components

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

Included Screw

WM-1□ : Bind M3-8
WM-2□ : Bind M4-88

**Product no. / Details**

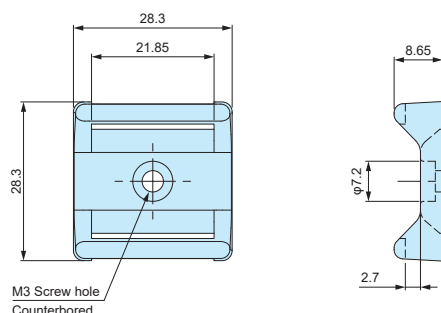
Product no.		W	H	D	Mountable thickness	Weight (g)
● Off-white	● Dark gray					
WM-1W	WM-1D	45	9	65	t0.8~t3.5	11.5
WM-2W	WM-2D	80	11	115	t0.8~t3.5	48

PMB-1**POLE MOUNTING BRACKET**

Installation example



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



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

Product no. / Details

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

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

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

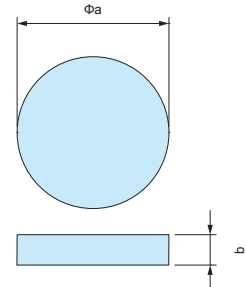
■ DXF/DWG/PDF drawings available on our website.



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

Product no. / Details

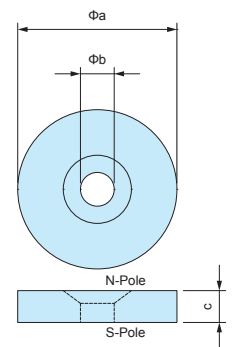
Product no.	a	b	Weight (g)	Flux Density	Absorption
NMG3-15N	15	3	4	214.4 mT	2.44 kgf
NMG3-20N	20	3	7.1	170.7 mT	3.26 kgf
NMG5-22N	22	5	11.4	247.2 mT	5.91 kgf
NMG5-25N	25	5	18.4	221.9 mT	6.89 kgf

NMG dimensions**Round magnet with countersunk hole**

- Please fasten with a screw.

**Product no. / Details**

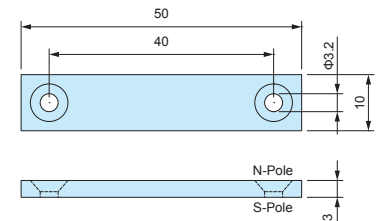
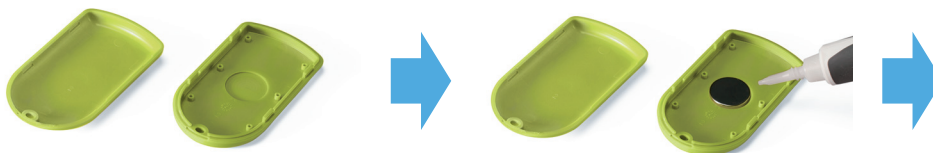
Product no.	a	b	c	Countersunk size	Weight (g)	Flux Density	Absorption
NMG3-15M3	15	3.2	3	M3	3.8	214.3 mT	2.33 kgf
NMG3-20M3	20	3.2	3	M3	6.9	170.6 mT	3.17 kgf
NMG5-22M4	22	4.3	5	M4	13.7	247.2 mT	5.68 kgf
NMG5-25M5	25	5.3	5	M5	17.6	221.9 mT	6.58 kgf

**Rectangular magnet with countersunk holes**

- Please fasten with a screw.

**Product no. / Details**

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

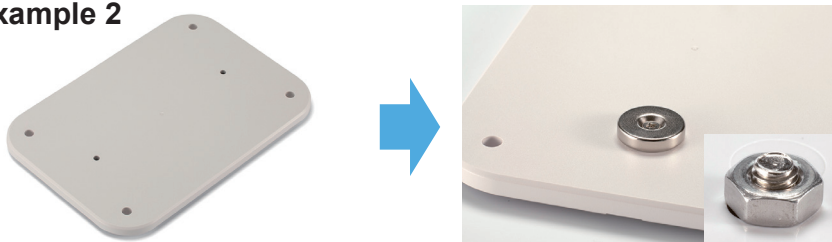
**Example 1** The magnetic force remains strong even through plastic.

Make recessed pocket on the inside wall.

Glue on.



Attach onto a metallic surface.

Example 2

Make holes

Fasten with a screw and nut.



Attach onto a metallic surface.

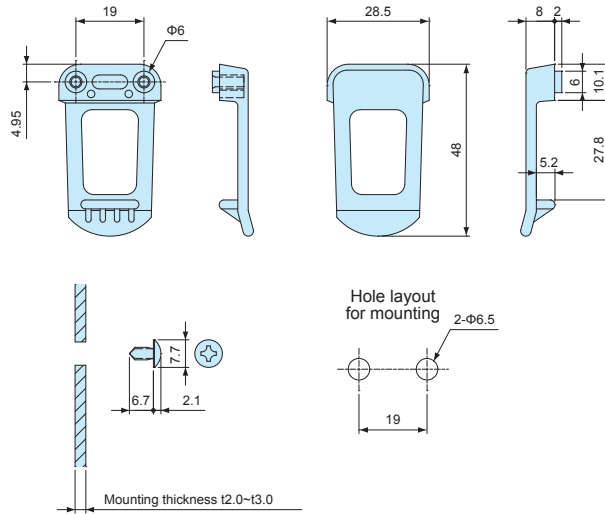
CAUTION: Handle with care to avoid personal injury or damage to the magnet.

GDH series**PLASTIC BELT CLIP**

Installation example

GDH dimensions

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

**Components**

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

Product no. / Details

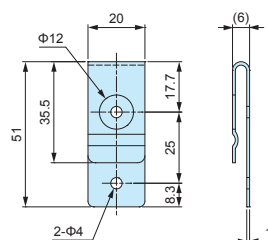
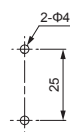
Product no.		W	H	D
● White	● Black			
GDH-1W	GDH-1B	28.5	10	48

DK series**STEEL BELT CLIP****DK dimensions**

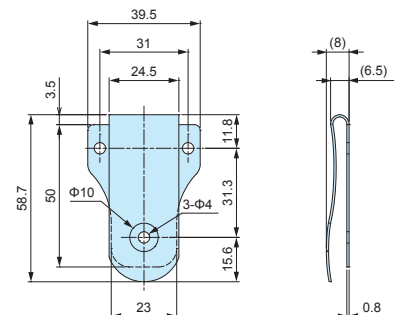
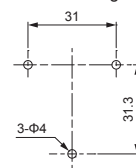
■ DXF/DWG/PDF drawings available on our website.



DK-1

Hole layout
for mounting

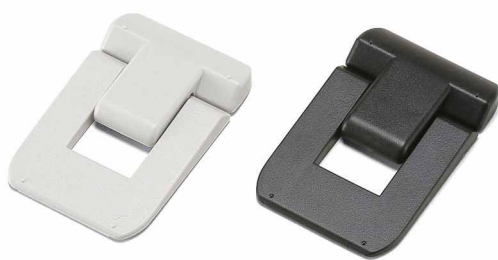
DK-2

Hole layout
for mounting**Product no. / Details**

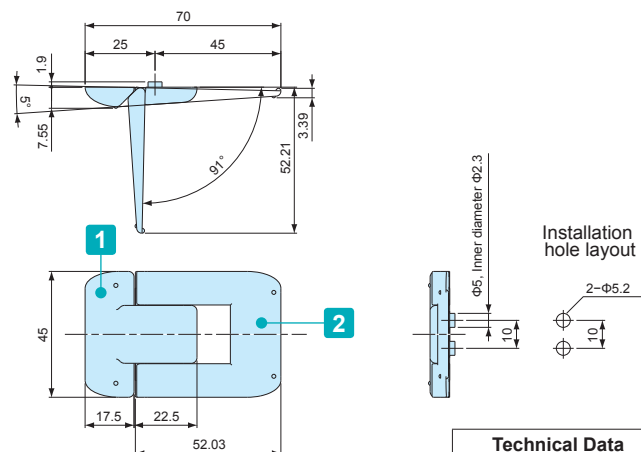
Product no.	Material	Finish
DK-1	Steel SPCC t=1.0	Chrome plated
DK-2	Steel SPCC t=0.8	Chrome plated

TI SERIES

TILT STAND



Installation Example



Technical Data

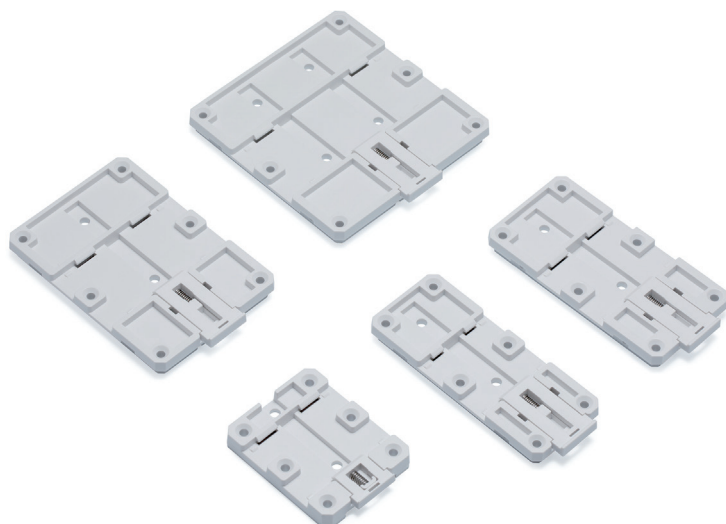
Max load : 3kg

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

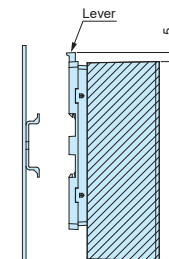


Installation Example



NOTE

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



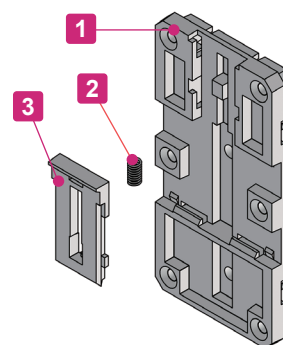
Technical Data

Max load : 5kg

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

Components

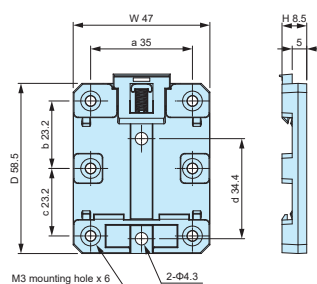
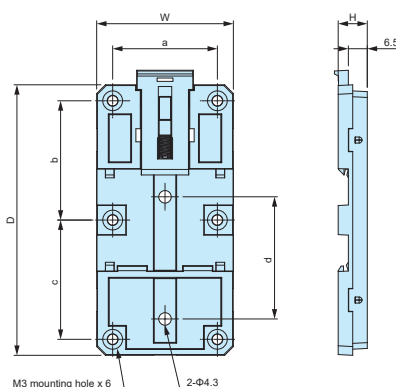
No.	Part name	Pcs	Materials	Color / Finish
1	Base	1	PC/ABS (UL94V-0)	Off-white
2	Compression spring	1	SUS304	Unfinished
3	Lever	1	PC/ABS (UL94V-0)	Off-white



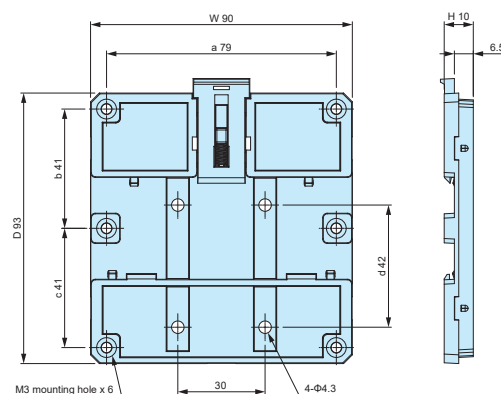
DRP dimensions

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

DRP5-6W

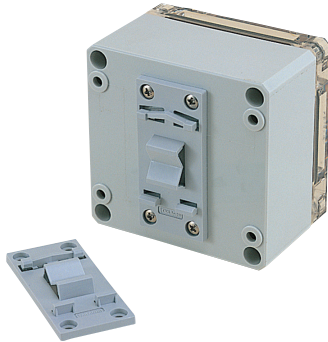
DRP4-9W, DRP5-9W
DRP7-9W

DRP9-9W

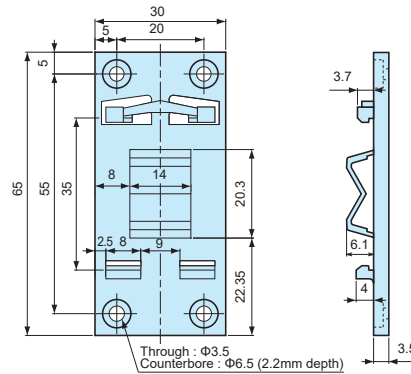


Product no. / Details

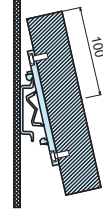
Product no.	Dimensions							Weight (g)	Old product model
	W	H	D	a	b	c	d		
NEW DRP4-9W	38	10	93	27	41	41	41	20.6	DRA-2
NEW DRP5-6W	47	8.5	58.5	35	23.2	23.2	34.4	13.4	DRA-3
DRP5-9W	47	10	93	36	41	41	42	24.6	DRA-1
NEW DRP7-9W	65	10	93	54	41	41	42	31.3	—
NEW DRP9-9W	90	10	93	79	41	41	42	41.6	—

DRT series**DIN RAIL MOUNTING BASE****Installation example**

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

**NOTE**

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



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

Technical Data

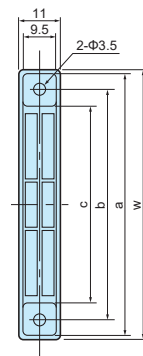
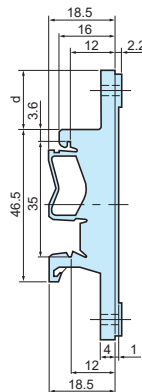
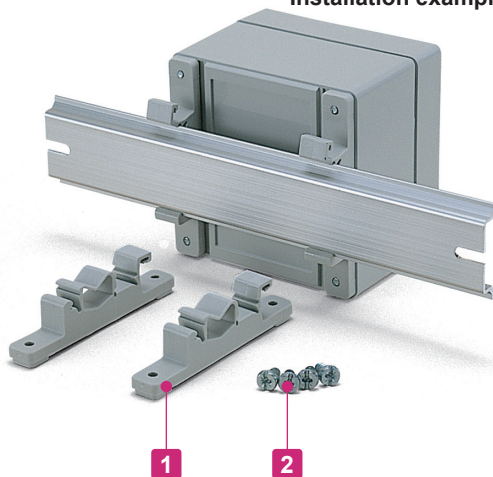
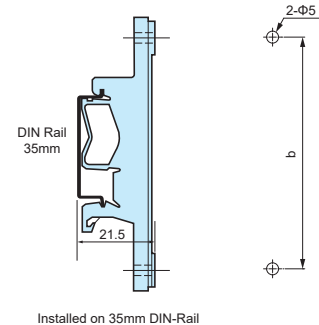
Max load : 1kg

Product no. / Details

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

CKD series**DIN RAIL MOUNTING FEET****Installation example**

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

**Hole layout for mounting**

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

Technical Data

Max load : 3kg / 2pcs

Components

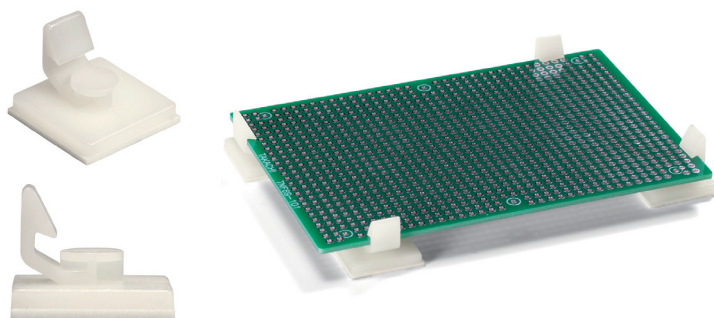
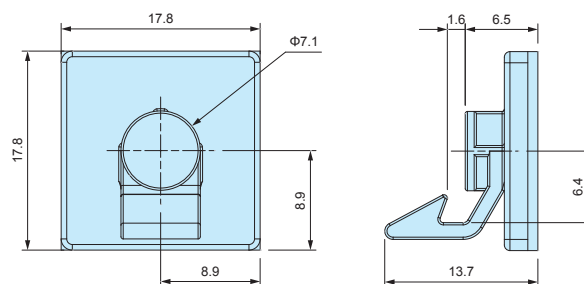
No.	Part name	Pcs	Material	Color / Finish
1	Mounting feet	2	Polyamide	White gray
2	Screw (special type 4.2 x 9.5)	4	Steel	Unichrome plated

Product no. / Details

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

ULCK series**SCREWLESS PCB ADHESIVE STANDOFF**

Application example

**ULCK dimensions**

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

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

Product no. / Details

■ Material / Color : PA66 UL94V-2 / Natural

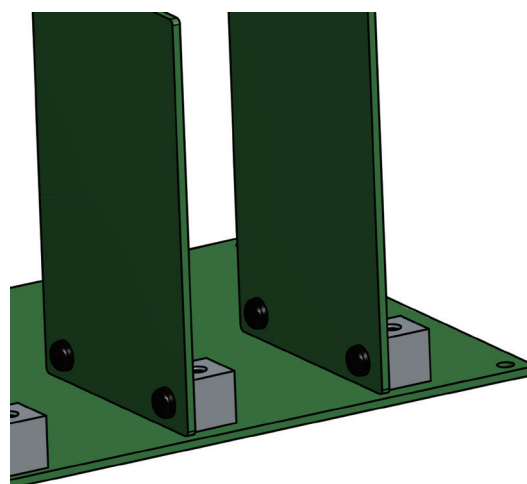
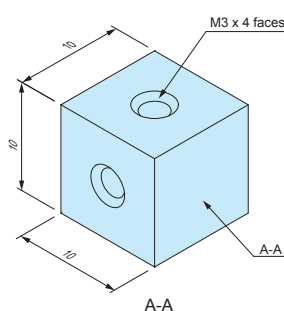
Product no.	Weight (g)	Pack of
ULCK-6.4	1.3 (1 pc)	4

CUBE series**CUBE STANDOFF**

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

CUBE10-M3

CUBE10-M4



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

Product no. / Details

■ Zinc diecast : Glossy barrel finish

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

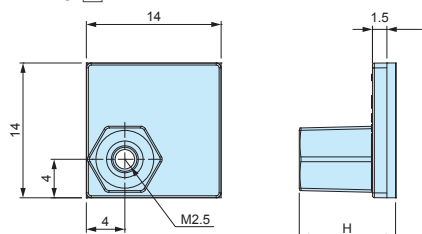
AST series**INSERT NUT ADHESIVE STANDOFF**

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

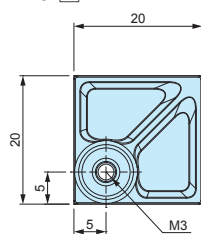
AST dimensions

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

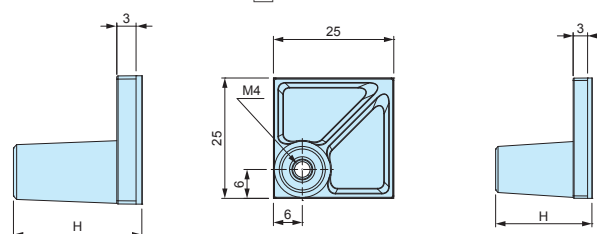
AST2.5-□



AST3-□



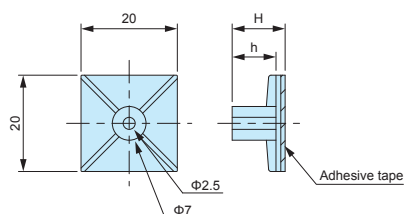
AST4-□

**Product no. / Details****Bulk package**

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

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

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

ASR series**ADHESIVE PCB STANDOFF****ASR dimensions**

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

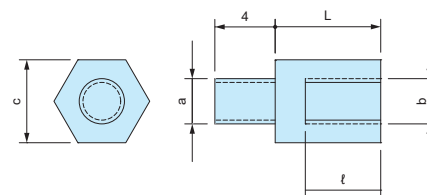
**Product no. / Details**

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

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

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

Technical Data
Recommended torque : 0.4N · m

TPS series**TAPPING STANDOFF**

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

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

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

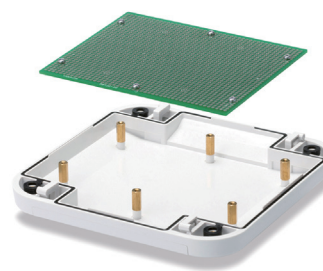
Product no. / Details

■ Material / Finish : Brass / Unfinished

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



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

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

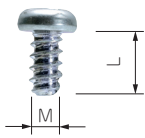
■ Pan head PCB mounting Screws for TPS tapping standoffs.

Product no. / Details

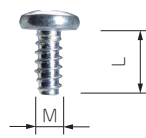
Product no.	M	L	Material	Finish	Pack of
MT2.3-4	2.3	4	Steel	Trivalent chromate	20
MT2.3-6	2.3	6	Steel	Trivalent chromate	20
MT2.6-4	2.6	4	Steel	Trivalent chromate	20
NEW MT2.6-6	2.6	6	Steel	Trivalent chromate	20
NEW MT3-4	3	4	Steel	Trivalent chromate	20
NEW MT3-6	3	6	Steel	Trivalent chromate	20
NEW MT4-4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

EM series**PCB MOUNTING SCREW**

Pan head



Bind head



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

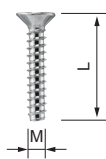
Product no. / Details

■ Material / Finish : Steel / Trivalent chromate

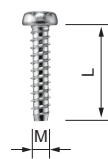
Product no.	M	L	Head type	Suitable models	Pack of
EM-1.6	1.6	4	Pan	SMW • CSS • CS SIC • SIM • WC • PS (M1.6 boss models)	50
EM-2	2	5	Pan	PS • TW • TWN • TWF SIC • SIM • PF • WC • WP (M2 boss models)	50
NEW EM-B2	2	5	Bind	SIC • SIM (M2 boss models) SIC • SIM6-12-□ (when installing PCB46-101)	50
EM-2.3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

MR series**TORX SCREW**

Flat head



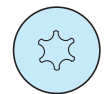
Pan head



With pin



★ Without pin



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

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

Product no. / Details

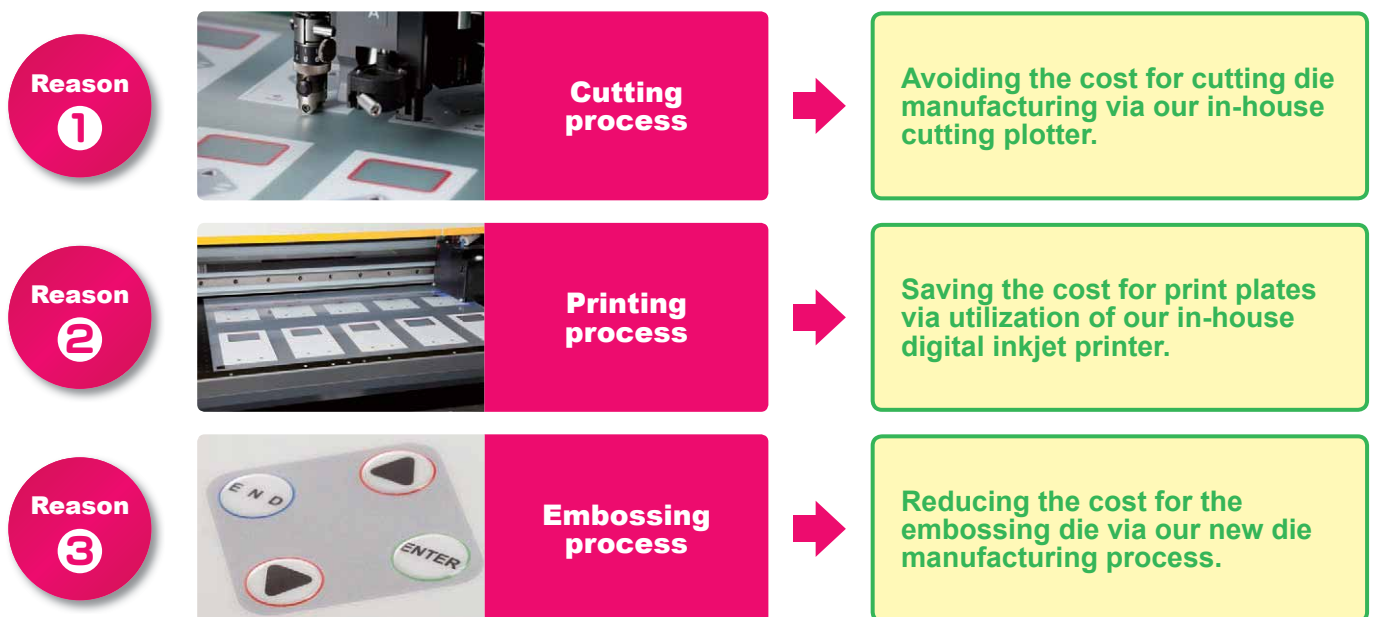
★ Mark = Without pin

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

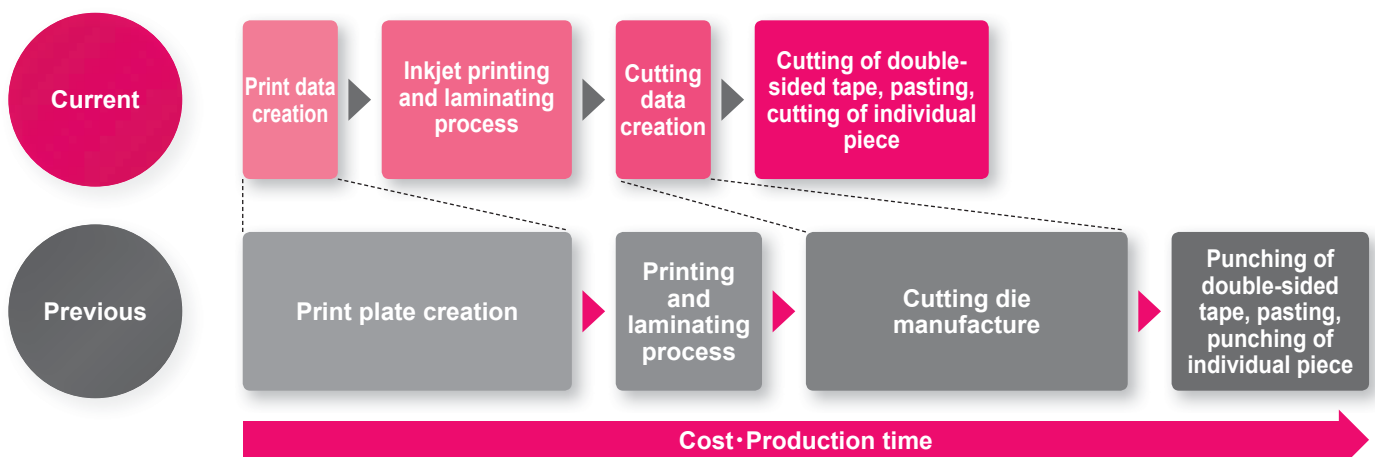
DIGITAL PRINTED OVERLAY



3 reasons for low initial costs



Comparison of current and previous manufacturing methods



PRODUCTION PROCESS



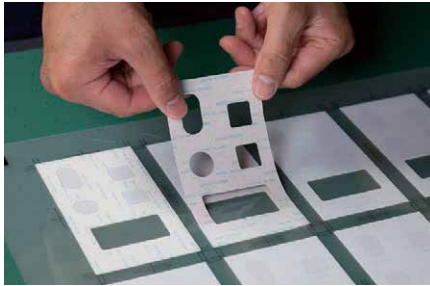
1. Inkjet printing on film



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

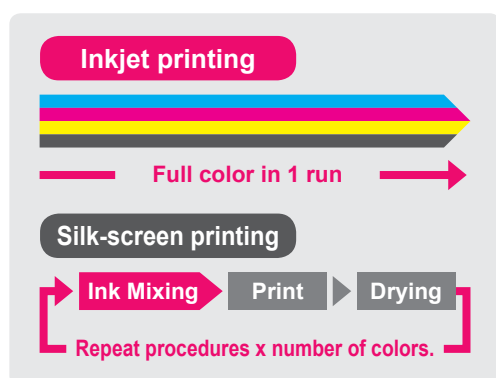
CUSTOMIZATION EXAMPLE



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.



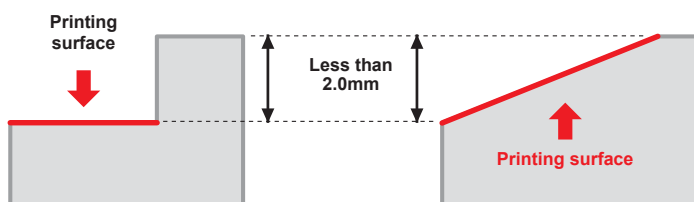
Maximum printable enclosure size



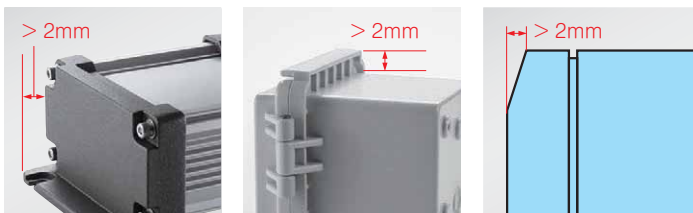
Printable on surfaces with height differential

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.

