

# MULTI-FUNCTION EXTRUDED ALUMINIUM CASE

## EXP·EXPF·EXPE·EXEF·EXW·EXWF series

The following series, by utilizing similar extrusion frames, are available in 6 different types, such as having IP65, or EMC shielded functions, among others.  
67 different sizes are available for each version.

### CORNER GUARD

EXP series Page 135 ~ 136



### FLANGED

EXPF series Page 141 ~ 142



### IP65 CORNER GUARD

EXW series Page 139 ~ 140



### IP65 FLANGED

EXWF series Page 145 ~ 146



### EMC CORNER GUARD

EXPE series Page 137 ~ 138



### EMC FLANGED

EXEF series Page 143 ~ 144



**Custom length available in 1mm intervals.**



# 16 COLOR COMBINATIONS

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



## APPLICATION EXAMPLE

### MEASURING INSTRUMENT



Accessories (Optional parts)  
Tilt leg TLW series  
See page 154

### NETWORK / COMMUNICATION BOX



### CONTROLLER



**FIBER LASER PROJECTOR** Product by NEOARK (Japan)



**IMPULSE GENERATOR** Product by Digital Signal Technology (Japan)



**PERISTALTIC DC PUMP**

Product by Technic (USA)



**PHOTO-FLASH SEQUENCER**

Product by ScanBox (France)



※Photo is IP65 waterproof EXW mode.  
See page 139 ~ 140 for EXW series.



**DESKTOP LOAD CELL AMPLIFIER** Product by IMADA (Japan)



**WIDE RANGE SPEED MEASUREMENT SYSTEM** Product by ACT Electronics (Japan)



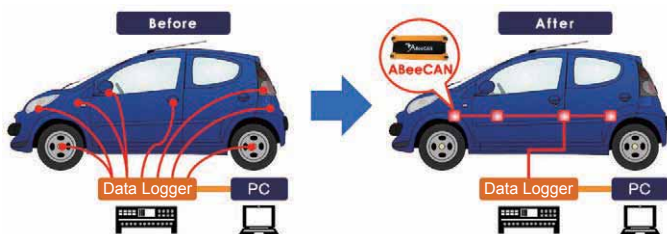
**A Bee CAN - ANALOG CAN CONVERTER** Product by PERITEC (Japan)



※Above photo is custom length EXP series.

**APPLICATION EXAMPLE**  
**Testing system for vehicle air conditioning.**

Converter for analog signal data (temperature, voltage and humidity) can be convert to CAN data and transmitted to CAN bus. Wiring quantity and cost can be saved by converting to CAN format for easy data collection through CAN data logger.







- Corner guards are designed to be both aesthetically pleasing, and impact resistant.
- Available in 67 different sizes and 16 different color combinations.
- Custom length is available.

Components

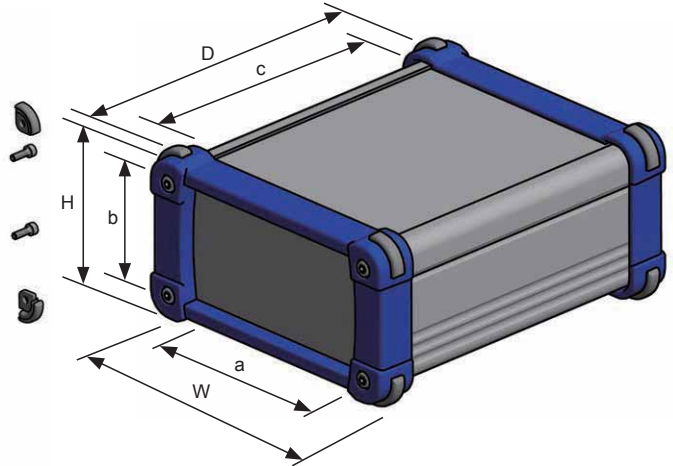
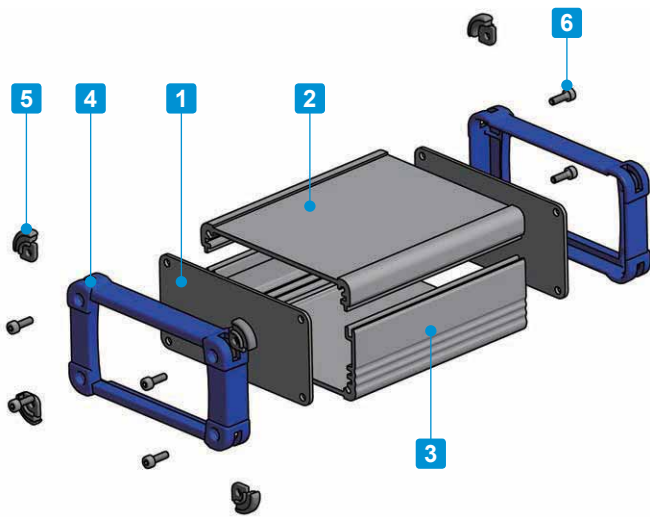
No.	Part name	Pcs	Material	Color / Finish
1	Panel	2	Aluminium A1100P	Silver • Black / Anodized
2	Top cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Bottom cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
4	Exterior frame	2	PC+ABS UL94V-0	Black • Gray / Unpainted Indigo • Navy • Yellow • Orange • Red / Painted
5	Corner guard	8	Silicone	Black • Dark gray
6	Screw	8	Stainless steel	Unfinished

■ See page 149 ~ 152 for Top / Bottom cover dimensions.

Color Type

Code	<b>S   B</b> Silver / Black	<b>S   G</b> Silver / Gray	<b>S   I</b> Silver / Indigo	<b>S   N</b> Silver / Navy
Color				
Code	<b>S   L</b> Silver / Lime	<b>S   Y</b> Silver / Yellow	<b>S   O</b> Silver / Orange	<b>S   R</b> Silver / Red
Color				
Code	<b>B   B</b> Black / Black	<b>B   G</b> Black / Gray	<b>B   I</b> Black / Indigo	<b>B   N</b> Black / Navy
Color				
Code	<b>B   L</b> Black / Lime	<b>B   Y</b> Black / Yellow	<b>B   O</b> Black / Orange	<b>B   R</b> Black / Red
Color				

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



Included screws  
 EXP 7-□, 9-□ models : M2.5-8 x 8 pcs  
 EXP12-□, 15-□ models : M3-10 x 8 pcs  
 EXP20-□ models : M4-12 x 8 pcs  
 EXP24-□ models : M5-12 x 8 pcs  
 ※Hexagonal wrench included.

Product no. / Dimensions

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

Product no.	Dimensions (External)			Dimensions (Internal)		
	W	H	D	a	b	c
EXP 7- 3- 6□□	69	34	60	47	19.6	46
EXP 7- 3- 9□□	69	34	87	47	19.6	73
EXP 7- 3-11□□	69	34	110	47	19.6	96
EXP 7- 4- 6□□	69	44	60	47	29.6	46
EXP 7- 4- 9□□	69	44	87	47	29.6	73
EXP 7- 4-11□□	69	44	110	47	29.6	96
EXP 7- 6- 6□□	69	59	60	47	44.6	46
EXP 7- 6- 9□□	69	59	87	47	44.6	73
EXP 7- 6-11□□	69	59	110	47	44.6	96
EXP 9- 4- 7□□	89	39	70	67	24.6	56
EXP 9- 4-10□□	89	39	100	67	24.6	86
EXP 9- 4-13□□	89	39	130	67	24.6	116
EXP 9- 5- 7□□	89	49	70	67	34.6	56
EXP 9- 5-10□□	89	49	100	67	34.6	86
EXP 9- 5-13□□	89	49	130	67	34.6	116
EXP 9- 6- 7□□	89	64	70	67	49.6	56
EXP 9- 6-10□□	89	64	100	67	49.6	86
EXP 9- 6-13□□	89	64	130	67	49.6	116
EXP12- 4- 9□□	116	41	90	89	24	74
EXP12- 4-13□□	116	41	130	89	24	114
EXP12- 4-18□□	116	41	176	89	24	160
EXP12- 6- 9□□	116	56	90	89	39	74
EXP12- 6-13□□	116	56	130	89	39	114
EXP12- 6-18□□	116	56	176	89	39	160
EXP12- 7- 9□□	116	71	90	89	54	74
EXP12- 7-13□□	116	71	130	89	54	114
EXP12- 7-18□□	116	71	176	89	54	160
EXP15- 5-11□□	151	46	110	107.4	29	93
EXP15- 5-15□□	151	46	150	107.4	29	133
EXP15- 5-20□□	151	46	200	107.4	29	183
EXP15- 6-11□□	151	61	110	107.4	44	93
EXP15- 6-15□□	151	61	150	107.4	44	133
EXP15- 6-20□□	151	61	200	107.4	44	183
EXP15- 8-11□□	151	81	110	107.4	64	93
EXP15- 8-15□□	151	81	150	107.4	64	133
EXP15- 8-20□□	151	81	200	107.4	64	183
EXP15-10-11□□	151	101	110	107.4	84	93
EXP15-10-15□□	151	101	150	107.4	84	133
EXP15-10-20□□	151	101	200	107.4	84	183

Product no.	Dimensions (External)			Dimensions (Internal)		
	W	H	D	a	b	c
<b>NEW</b> EXP20- 6-14□□	199	56	140	132	35	120
<b>NEW</b> EXP20- 6-19□□	199	56	192	132	35	172
<b>NEW</b> EXP20- 6-25□□	199	56	245	132	35	225
<b>NEW</b> EXP20- 6-30□□	199	56	300	132	35	280
<b>NEW</b> EXP20- 7-14□□	199	74	140	132	53	120
<b>NEW</b> EXP20- 7-19□□	199	74	192	132	53	172
<b>NEW</b> EXP20- 7-25□□	199	74	245	132	53	225
<b>NEW</b> EXP20- 7-30□□	199	74	300	132	53	280
<b>NEW</b> EXP20- 9-14□□	199	94	140	132	73	120
<b>NEW</b> EXP20- 9-19□□	199	94	192	132	73	172
<b>NEW</b> EXP20- 9-25□□	199	94	245	132	73	225
<b>NEW</b> EXP20- 9-30□□	199	94	300	132	73	280
<b>NEW</b> EXP20-12-14□□	199	119	140	132	98	120
<b>NEW</b> EXP20-12-19□□	199	119	192	132	98	172
<b>NEW</b> EXP20-12-25□□	199	119	245	132	98	225
<b>NEW</b> EXP20-12-30□□	199	119	300	132	98	280
<b>NEW</b> EXP24- 6-17□□	244	64	170	177	43	147
<b>NEW</b> EXP24- 6-23□□	244	64	230	177	43	207
<b>NEW</b> EXP24- 6-29□□	244	64	290	177	43	267
<b>NEW</b> EXP24- 6-35□□	244	64	350	177	43	327
<b>NEW</b> EXP24- 9-17□□	244	89	170	177	68	147
<b>NEW</b> EXP24- 9-23□□	244	89	230	177	68	207
<b>NEW</b> EXP24- 9-29□□	244	89	290	177	68	267
<b>NEW</b> EXP24- 9-35□□	244	89	350	177	68	327
<b>NEW</b> EXP24-11-17□□	244	114	170	177	93	147
<b>NEW</b> EXP24-11-23□□	244	114	230	177	93	207
<b>NEW</b> EXP24-11-29□□	244	114	290	177	93	267
<b>NEW</b> EXP24-11-35□□	244	114	350	177	93	327

Accessories (Optional parts)



Tilt leg TLW series  
See page 154

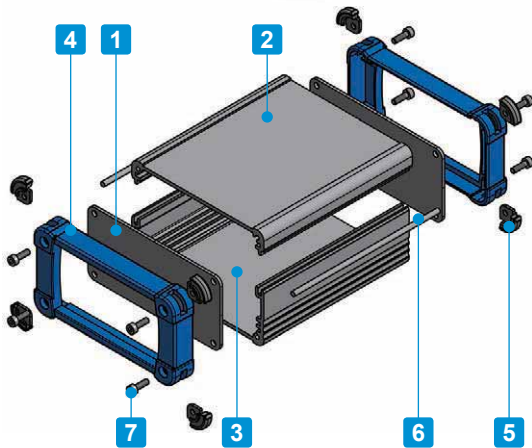


# EXPE SERIES

# ALUMINIUM EMC SHIELD CASE with CORNER GUARD



EMC  
Shielding  
Effects



- Corner guards are designed to be both aesthetically pleasing, and impact resistant.
- Available in 67 different sizes and 8 different color combinations.
- EMC shielding is achieved by having the unfinished inner sides of the top/bottom covers and panels, as well as the fabric-over-foam gasket in contact with one another.

Included screws  
 EXPE 7-□, 9-□ models : M2.5-8 x 8 pcs  
 EXPE12-□, 15-□ models : M3-10 x 8 pcs  
 EXPE20-□ models : M4-12 x 8 pcs  
 EXPE24-□ models : M5-12 x 8 pcs  
 ※Hexagonal wrench included.

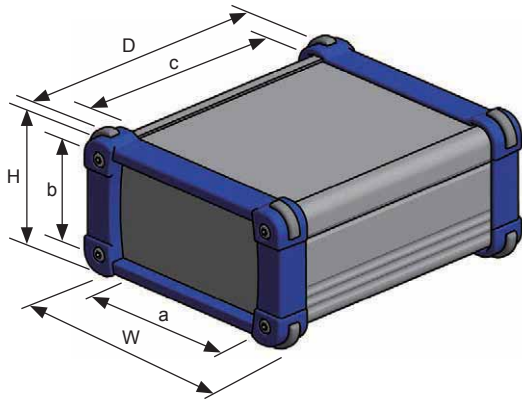
### Components

No.	Part name	Pcs	Material	Color / Finish
1	Panel	2	Aluminium A1100P	Silver / Painted (outside) • Unfinished (inside)
2	Top cover	1	Extruded aluminium A6063S-T5	Silver / Painted (outside) • Unfinished (inside)
3	Bottom cover	1	Extruded aluminium A6063S-T5	Silver / Painted (outside) • Unfinished (inside)
4	Exterior frame	2	PC+ABS UL94V-0	Black • Gray / Unpainted Indigo • Navy • Yellow • Orange • Red / Painted
5	Corner guard	8	Silicone	Black • Dark gray
6	Fabric-over-foam gasket	2	Conductive fabric : TPE	Metallic gray
7	Screw	8	Stainless steel	Unfinished

■ See page 149 ~ 152 for Top / Bottom cover dimensions.

### Color Type

Code	S B Silver / Black	S G Silver / Gray	S I Silver / Indigo	S N Silver / Navy
Color				
Code	S L Silver / Lime	S Y Silver / Yellow	S O Silver / Orange	S R Silver / Red
Color				



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

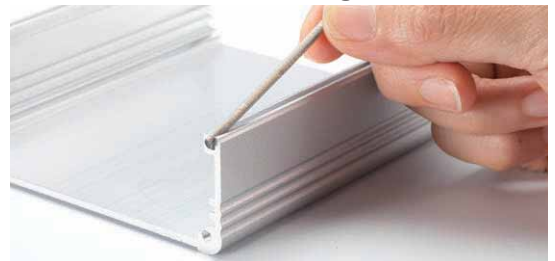
**Product no. / Dimensions**

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

Product no.	Dimensions (External)			Dimensions (Internal)		
	W	H	D	a	b	c
EXPE 7- 3- 6□□	69	34	60	47	19.6	46
EXPE 7- 3- 9□□	69	34	87	47	19.6	73
EXPE 7- 3-11□□	69	34	110	47	19.6	96
EXPE 7- 4- 6□□	69	44	60	47	29.6	46
EXPE 7- 4- 9□□	69	44	87	47	29.6	73
EXPE 7- 4-11□□	69	44	110	47	29.6	96
EXPE 7- 6- 6□□	69	59	60	47	44.6	46
EXPE 7- 6- 9□□	69	59	87	47	44.6	73
EXPE 7- 6-11□□	69	59	110	47	44.6	96
EXPE 9- 4- 7□□	89	39	70	67	24.6	56
EXPE 9- 4-10□□	89	39	100	67	24.6	86
EXPE 9- 4-13□□	89	39	130	67	24.6	116
EXPE 9- 5- 7□□	89	49	70	67	34.6	56
EXPE 9- 5-10□□	89	49	100	67	34.6	86
EXPE 9- 5-13□□	89	49	130	67	34.6	116
EXPE 9- 6- 7□□	89	64	70	67	49.6	56
EXPE 9- 6-10□□	89	64	100	67	49.6	86
EXPE 9- 6-13□□	89	64	130	67	49.6	116
EXPE12- 4- 9□□	116	41	90	89	24	74
EXPE12- 4-13□□	116	41	130	89	24	114
EXPE12- 4-18□□	116	41	176	89	24	160
EXPE12- 6- 9□□	116	56	90	89	39	74
EXPE12- 6-13□□	116	56	130	89	39	114
EXPE12- 6-18□□	116	56	176	89	39	160
EXPE12- 7- 9□□	116	71	90	89	54	74
EXPE12- 7-13□□	116	71	130	89	54	114
EXPE12- 7-18□□	116	71	176	89	54	160
EXPE15- 5-11□□	151	46	110	107.4	29	93
EXPE15- 5-15□□	151	46	150	107.4	29	133
EXPE15- 5-20□□	151	46	200	107.4	29	183
EXPE15- 6-11□□	151	61	110	107.4	44	93
EXPE15- 6-15□□	151	61	150	107.4	44	133
EXPE15- 6-20□□	151	61	200	107.4	44	183
EXPE15- 8-11□□	151	81	110	107.4	64	93
EXPE15- 8-15□□	151	81	150	107.4	64	133
EXPE15- 8-20□□	151	81	200	107.4	64	183
EXPE15-10-11□□	151	101	110	107.4	84	93
EXPE15-10-15□□	151	101	150	107.4	84	133
EXPE15-10-20□□	151	101	200	107.4	84	183

Product no.	Dimensions (External)			Dimensions (Internal)		
	W	H	D	a	b	c
NEW EXPE20- 6-14□□	199	56	140	132	35	120
NEW EXPE20- 6-19□□	199	56	192	132	35	172
NEW EXPE20- 6-25□□	199	56	245	132	35	225
NEW EXPE20- 6-30□□	199	56	300	132	35	280
NEW EXPE20- 7-14□□	199	74	140	132	53	120
NEW EXPE20- 7-19□□	199	74	192	132	53	172
NEW EXPE20- 7-25□□	199	74	245	132	53	225
NEW EXPE20- 7-30□□	199	74	300	132	53	280
NEW EXPE20- 9-14□□	199	94	140	132	73	120
NEW EXPE20- 9-19□□	199	94	192	132	73	172
NEW EXPE20- 9-25□□	199	94	245	132	73	225
NEW EXPE20- 9-30□□	199	94	300	132	73	280
NEW EXPE20-12-14□□	199	119	140	132	98	120
NEW EXPE20-12-19□□	199	119	192	132	98	172
NEW EXPE20-12-25□□	199	119	245	132	98	225
NEW EXPE20-12-30□□	199	119	300	132	98	280
NEW EXPE24- 6-17□□	244	64	170	177	43	147
NEW EXPE24- 6-23□□	244	64	230	177	43	207
NEW EXPE24- 6-29□□	244	64	290	177	43	267
NEW EXPE24- 6-35□□	244	64	350	177	43	327
NEW EXPE24- 9-17□□	244	89	170	177	68	147
NEW EXPE24- 9-23□□	244	89	230	177	68	207
NEW EXPE24- 9-29□□	244	89	290	177	68	267
NEW EXPE24- 9-35□□	244	89	350	177	68	327
NEW EXPE24-11-17□□	244	114	170	177	93	147
NEW EXPE24-11-23□□	244	114	230	177	93	207
NEW EXPE24-11-29□□	244	114	290	177	93	267
NEW EXPE24-11-35□□	244	114	350	177	93	327

**How to install a shield gasket**



■ Insert fabric-over-foam gasket into the joint-grooves on the bottom cover.



■ Ensure that a small portion of the fabric-over-foam gasket protrudes out in order to maintain a connection with the end panel.

Following models are suitable for placement of a Mini-ITX board.

- EXPE20-7-19□□
- EXPE20-9-19□□
- EXPE20-12-19□□





# EXW SERIES

# IP65 ALUMINIUM CASE with CORNER GUARD



- IP65 is made possible by the sealing of between top & bottom covers and end panels with gaskets.
- Available in 39 different sizes and 6 different color combinations by 2 body frame and 3 end panel colors.
- Custom length is available.

Technical Data
Protection class : IP65

Included screw  
 EXW7-□, 9-□ models : M2.5-8 x 8 pcs  
 EXW12-□, 15-□ models : M3-10 x 8 pcs  
 ※Hexagonal wrench included.

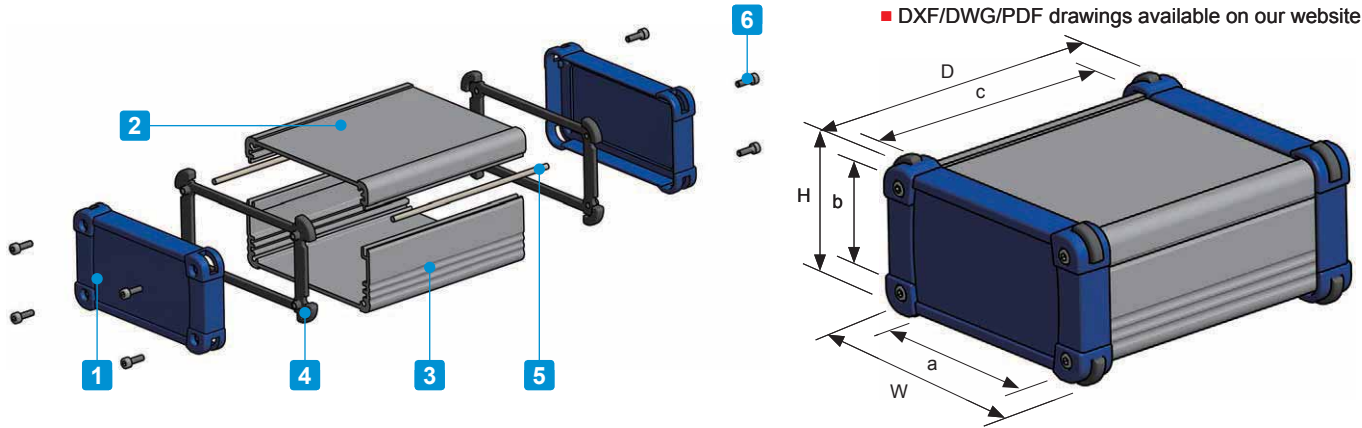
### Components

No.	Part name	Pcs	Material	Color / Finish
1	End panel	2	PC+ABS UL94V-0	Black • Gray / Unpainted Navy / Painted
2	Top cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Bottom cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
4	Panel gasket	2	Silicone	Black • Dark gray
5	Cover gasket	2	Silicone	White gray
6	Screw	8	Stainless Steel	Unfinished

### Color Type

Code	S B Silver / Black	S G Silver / Gray	S N Silver / Navy
Color			
Code	B B Black / Black	B G Black / Gray	B N Black / Navy
Color			

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



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

**Product no. / Dimensions**

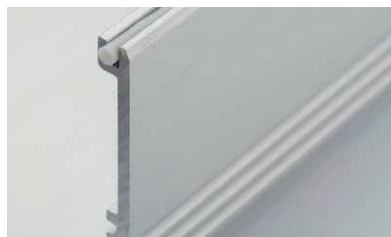
Product no.	External dimensions			Internal dimensions		
	W	H	D	a	b	c
EXW 7- 3- 6□□	69	34	58	47	20	46
EXW 7- 3- 9□□	69	34	85	47	20	73
EXW 7- 3-11□□	69	34	108	47	20	96
EXW 7- 4- 6□□	69	44	58	47	30	46
EXW 7- 4- 9□□	69	44	85	47	30	73
EXW 7- 4-11□□	69	44	108	47	30	96
EXW 7- 6- 6□□	69	59	58	47	45	46
EXW 7- 6- 9□□	69	59	85	47	45	73
EXW 7- 6-11□□	69	59	108	47	45	96
EXW 9- 4- 7□□	89	39	69	67	25	56
EXW 9- 4-10□□	89	39	99	67	25	86
EXW 9- 4-13□□	89	39	129	67	25	116
EXW 9- 5- 7□□	89	49	69	67	35	56
EXW 9- 5-10□□	89	49	99	67	35	86
EXW 9- 5-13□□	89	49	129	67	35	116
EXW 9- 6- 7□□	89	64	69	67	50	56
EXW 9- 6-10□□	89	64	99	67	50	86
EXW 9- 6-13□□	89	64	129	67	50	116
EXW12- 4- 9□□	116	41	88	89	24	74
EXW12- 4-13□□	116	41	128	89	24	114
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EXW12- 6- 9□□	116	56	88	89	39	74
EXW12- 6-13□□	116	56	128	89	39	114
EXW12- 6-18□□	116	56	174	89	39	160
EXW12- 7- 9□□	116	71	88	89	54	74
EXW12- 7-13□□	116	71	128	89	54	114
EXW12- 7-18□□	116	71	174	89	54	160
EXW15- 5-11□□	151	46	107	107	29	93
EXW15- 5-15□□	151	46	147	107	29	133
EXW15- 5-20□□	151	46	197	107	29	183
EXW15- 6-11□□	151	61	107	107	44	93
EXW15- 6-15□□	151	61	147	107	44	133
EXW15- 6-20□□	151	61	197	107	44	183
EXW15- 8-11□□	151	81	107	107	64	93
EXW15- 8-15□□	151	81	147	107	64	133
EXW15- 8-20□□	151	81	197	107	64	183
EXW15-10-11□□	151	101	107	107	84	93
EXW15-10-15□□	151	101	147	107	84	133
EXW15-10-20□□	151	101	197	107	84	183

■ Custom length is available.

**How to install cover gasket**



■ Insert cover gaskets into the joint-grooves on the bottom cover.



■ Ensure that a small portion of the cover gasket protrudes out in order to maintain a seal with the panel gasket.





- Equipped with flanged frame for easy wall mounting.
- Available in 67 different sizes and 6 different color combinations.
- Custom length is available.

Included screws

- EXPF 7-□, 9-□ models : M2.5-8 x 8 pcs
- EXPF11-□, 15-□ models : M3-10 x 8 pcs
- EXPF20-□ models : M4-12 x 8 pcs
- EXPF24-□ models : M5-12 x 8 pcs
- ※Hexagonal wrench included.

Components

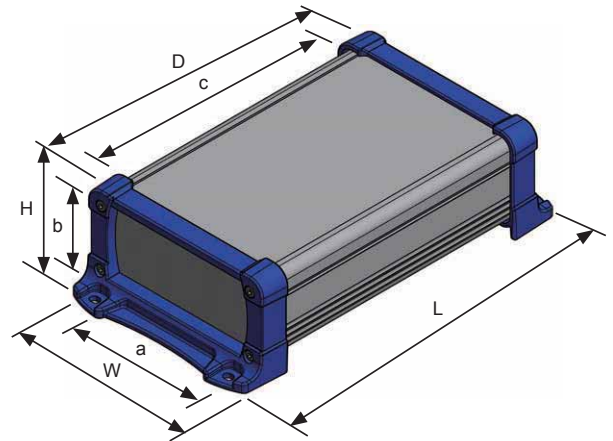
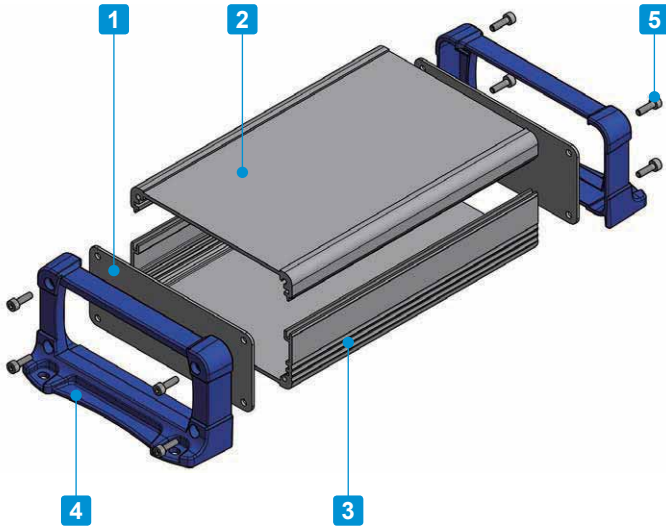
No.	Part name	Pcs	Material	Color / Finish
1	Panel	2	Aluminium A1100P	Silver • Black / Anodized
2	Top cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Bottom cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
4	Flanged frame	2	PC+ABS UL94V-0	Black • Gray / Unpainted Navy / Painted
5	Screw	8	Stainless steel	Unfinished

■ See page 149 ~ 152 for Top / Bottom cover dimensions.

Color Type

Code	S B Silver / Black	S G Silver / Gray	S N Silver / Navy
Color			
Code	B B Black / Black	B G Black / Gray	B N Black / Navy
Color			

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



Product no. / Dimensions

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

Product no.	Dimensions (External)				Dimensions (Internal)		
	W	H	D	L	a	b	c
NEW EXPF 7- 3- 6□□	66	34	60	84	47	19.6	46
NEW EXPF 7- 3- 9□□	66	34	87	111	47	19.6	73
NEW EXPF 7- 3-11□□	66	34	110	134	47	19.6	96
NEW EXPF 7- 4- 6□□	66	44	60	84	47	29.6	46
NEW EXPF 7- 4- 9□□	66	44	87	111	47	29.6	73
NEW EXPF 7- 4-11□□	66	44	110	134	47	29.6	96
NEW EXPF 7- 6- 6□□	66	59	60	84	47	44.6	46
NEW EXPF 7- 6- 9□□	66	59	87	111	47	44.6	73
NEW EXPF 7- 6-11□□	66	59	110	134	47	44.6	96
NEW EXPF 9- 4- 7□□	86	39	70	95.8	67	24.6	56
NEW EXPF 9- 4-10□□	86	39	100	125.8	67	24.6	86
NEW EXPF 9- 4-13□□	86	39	130	155.8	67	24.6	116
NEW EXPF 9- 5- 7□□	86	49	70	95.8	67	34.6	56
NEW EXPF 9- 5-10□□	86	49	100	125.8	67	34.6	86
NEW EXPF 9- 5-13□□	86	49	130	155.8	67	34.6	116
NEW EXPF 9- 6- 7□□	86	64	70	95.8	67	49.6	56
NEW EXPF 9- 6-10□□	86	64	100	125.8	67	49.6	86
NEW EXPF 9- 6-13□□	86	64	130	155.8	67	49.6	116
NEW EXPF11- 4- 9□□	113	41.5	90	121.8	89	24	74
NEW EXPF11- 4-13□□	113	41.5	130	161.8	89	24	114
NEW EXPF11- 4-18□□	113	41.5	176	207.8	89	24	160
NEW EXPF11- 6- 9□□	113	56.5	90	121.8	89	39	74
NEW EXPF11- 6-13□□	113	56.5	130	161.8	89	39	114
NEW EXPF11- 6-18□□	113	56.5	176	207.8	89	39	160
NEW EXPF11- 7- 9□□	113	71.5	90	121.8	89	54	74
NEW EXPF11- 7-13□□	113	71.5	130	161.8	89	54	114
NEW EXPF11- 7-18□□	113	71.5	176	207.8	89	54	160
NEW EXPF15- 5-11□□	148	47	110	149.2	107.4	29	93
NEW EXPF15- 5-15□□	148	47	150	189.2	107.4	29	133
NEW EXPF15- 5-20□□	148	47	200	239.2	107.4	29	183
NEW EXPF15- 6-11□□	148	62	110	149.2	107.4	44	93
NEW EXPF15- 6-15□□	148	62	150	189.2	107.4	44	133
NEW EXPF15- 6-20□□	148	62	200	239.2	107.4	44	183
NEW EXPF15- 8-11□□	148	82	110	149.2	107.4	64	93
NEW EXPF15- 8-15□□	148	82	150	189.2	107.4	64	133
NEW EXPF15- 8-20□□	148	82	200	239.2	107.4	64	183
NEW EXPF15-10-11□□	148	102	110	149.2	107.4	84	93
NEW EXPF15-10-15□□	148	102	150	189.2	107.4	84	133
NEW EXPF15-10-20□□	148	102	200	239.2	107.4	84	183

Product no.	Dimensions (External)				Dimensions (Internal)		
	W	H	D	L	a	b	c
NEW EXPF20- 6-14□□	195	57	140	188.6	132	35	120
NEW EXPF20- 6-19□□	195	57	192	240.6	132	35	172
NEW EXPF20- 6-25□□	195	57	245	293.6	132	35	225
NEW EXPF20- 6-30□□	195	57	300	348.6	132	35	280
NEW EXPF20- 8-14□□	195	75	140	188.6	132	53	120
NEW EXPF20- 8-19□□	195	75	192	240.6	132	53	172
NEW EXPF20- 8-25□□	195	75	245	293.6	132	53	225
NEW EXPF20- 8-30□□	195	75	300	348.6	132	53	280
NEW EXPF20-10-14□□	195	95	140	188.6	132	73	120
NEW EXPF20-10-19□□	195	95	192	240.6	132	73	172
NEW EXPF20-10-25□□	195	95	245	293.6	132	73	225
NEW EXPF20-10-30□□	195	95	300	348.6	132	73	280
NEW EXPF20-12-14□□	195	120	140	188.6	132	98	120
NEW EXPF20-12-19□□	195	120	192	240.6	132	98	172
NEW EXPF20-12-25□□	195	120	245	293.6	132	98	225
NEW EXPF20-12-30□□	195	120	300	348.6	132	98	280
NEW EXPF24- 7-17□□	240	65	170	218.6	177	43	147
NEW EXPF24- 7-23□□	240	65	230	278.6	177	43	207
NEW EXPF24- 7-29□□	240	65	290	338.6	177	43	267
NEW EXPF24- 7-35□□	240	65	350	398.6	177	43	327
NEW EXPF24- 9-17□□	240	90	170	218.6	177	68	147
NEW EXPF24- 9-23□□	240	90	230	278.6	177	68	207
NEW EXPF24- 9-29□□	240	90	290	338.6	177	68	267
NEW EXPF24- 9-35□□	240	90	350	398.6	177	68	327
NEW EXPF24-12-17□□	240	115	170	218.6	177	93	147
NEW EXPF24-12-23□□	240	115	230	278.6	177	93	207
NEW EXPF24-12-29□□	240	115	290	338.6	177	93	267
NEW EXPF24-12-35□□	240	115	350	398.6	177	93	327

Following models are suitable for placement of a Mini-ITX board.

- EXPF20-8-19□□
- EXPF20-10-19□□
- EXPF20-12-19□□





EXEF SERIES

FLANGED ALUMINIUM EMC SHIELD CASE



EMC Shielding Effects



- EMC shielding is achieved by having the unfinished inner sides of the top/bottom covers and panels, as well as the fabric-over-foam gasket in contact with one another.
- Equipped with flanged frame for easy wall mounting.
- Available in 67 different sizes and 3 different color combinations.

Included screws  
 EXEF 7-□, 9-□ models : M2.5-8 x 8 pcs  
 EXEF11-□, 15-□ models : M3-10 x 8 pcs  
 EXEF20-□ models : M4-12 x 8 pcs  
 EXEF24-□ models : M5-12 x 8 pcs  
 ※Hexagonal wrench included.

Components

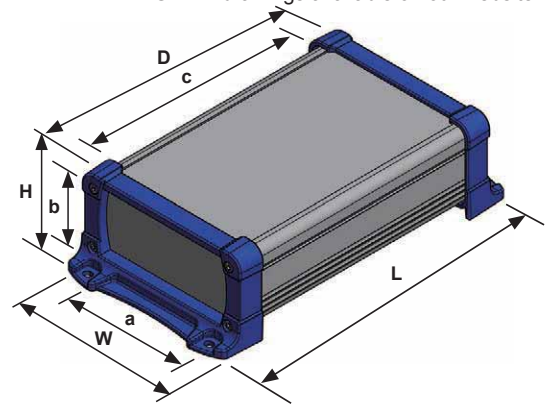
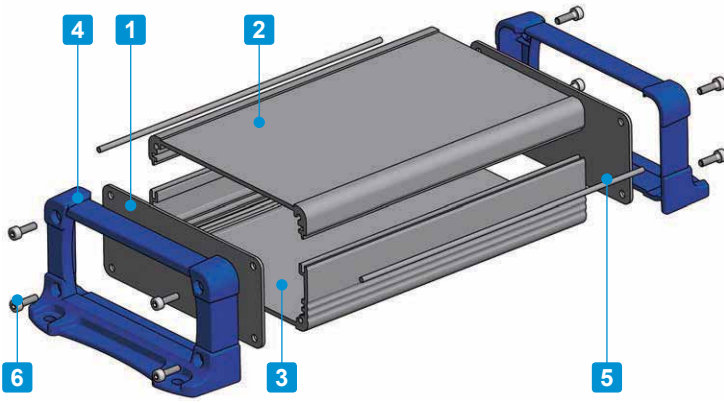
No.	Part name	Pcs	Material	Color / Finish
1	Panel	2	Aluminium A1100P	Silver / Painted (outside) • Unfinished (inside)
2	Top cover	1	Extruded aluminium A6063S-T5	Silver / Painted (outside) • Unfinished (inside)
3	Bottom cover	1	Extruded aluminium A6063S-T5	Silver / Painted (outside) • Unfinished (inside)
4	Flanged frame	2	PC+ABS UL94V-0	Black • Gray / Unpainted Navy / Painted
5	Fabric-over-foam gasket	2	Conductive fabric : TPE	Metallic gray
6	Screw	8	Stainless steel	Unfinished

■ See page 149 ~ 152 for Top / Bottom cover dimensions.

Color Type

Code	S/B Silver / Black	S/G Silver / Gray	S/N Silver / Navy
Color			

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



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

Product no. / Dimensions

Product no.	Dimensions (External)				Dimensions (Internal)		
	W	H	D	L	a	b	c
NEW EXEF 7- 3- 6□□	66	34	60	84	47	19.6	46
NEW EXEF 7- 3- 9□□	66	34	87	111	47	19.6	73
NEW EXEF 7- 3-11□□	66	34	110	134	47	19.6	96
NEW EXEF 7- 4- 6□□	66	44	60	84	47	29.6	46
NEW EXEF 7- 4- 9□□	66	44	87	111	47	29.6	73
NEW EXEF 7- 4-11□□	66	44	110	134	47	29.6	96
NEW EXEF 7- 6- 6□□	66	59	60	84	47	44.6	46
NEW EXEF 7- 6- 9□□	66	59	87	111	47	44.6	73
NEW EXEF 7- 6-11□□	66	59	110	134	47	44.6	96
NEW EXEF 9- 4- 7□□	86	39	70	95.8	67	24.6	56
NEW EXEF 9- 4-10□□	86	39	100	125.8	67	24.6	86
NEW EXEF 9- 4-13□□	86	39	130	155.8	67	24.6	116
NEW EXEF 9- 5- 7□□	86	49	70	95.8	67	34.6	56
NEW EXEF 9- 5-10□□	86	49	100	125.8	67	34.6	86
NEW EXEF 9- 5-13□□	86	49	130	155.8	67	34.6	116
NEW EXEF 9- 6- 7□□	86	64	70	95.8	67	49.6	56
NEW EXEF 9- 6-10□□	86	64	100	125.8	67	49.6	86
NEW EXEF 9- 6-13□□	86	64	130	155.8	67	49.6	116
NEW EXEF11- 4- 9□□	113	41.5	90	121.8	89	24	74
NEW EXEF11- 4-13□□	113	41.5	130	161.8	89	24	114
NEW EXEF11- 4-18□□	113	41.5	176	207.8	89	24	160
NEW EXEF11- 6- 9□□	113	56.5	90	121.8	89	39	74
NEW EXEF11- 6-13□□	113	56.5	130	161.8	89	39	114
NEW EXEF11- 6-18□□	113	56.5	176	207.8	89	39	160
NEW EXEF11- 7- 9□□	113	71.5	90	121.8	89	54	74
NEW EXEF11- 7-13□□	113	71.5	130	161.8	89	54	114
NEW EXEF11- 7-18□□	113	71.5	176	207.8	89	54	160
NEW EXEF15- 5-11□□	148	47	110	149.2	107.4	29	93
NEW EXEF15- 5-15□□	148	47	150	189.2	107.4	29	133
NEW EXEF15- 5-20□□	148	47	200	239.2	107.4	29	183
NEW EXEF15- 6-11□□	148	62	110	149.2	107.4	44	93
NEW EXEF15- 6-15□□	148	62	150	189.2	107.4	44	133
NEW EXEF15- 6-20□□	148	62	200	239.2	107.4	44	183
NEW EXEF15- 8-11□□	148	82	110	149.2	107.4	64	93
NEW EXEF15- 8-15□□	148	82	150	189.2	107.4	64	133
NEW EXEF15- 8-20□□	148	82	200	239.2	107.4	64	183
NEW EXEF15-10-11□□	148	102	110	149.2	107.4	84	93
NEW EXEF15-10-15□□	148	102	150	189.2	107.4	84	133
NEW EXEF15-10-20□□	148	102	200	239.2	107.4	84	183

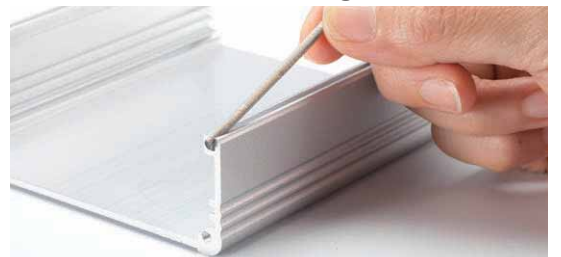
Product no.	Dimensions (External)				Dimensions (Internal)		
	W	H	D	L	a	b	c
NEW EXEF20- 6-14□□	195	57	140	188.6	132	35	120
NEW EXEF20- 6-19□□	195	57	192	240.6	132	35	172
NEW EXEF20- 6-25□□	195	57	245	293.6	132	35	225
NEW EXEF20- 6-30□□	195	57	300	348.6	132	35	280
NEW EXEF20- 8-14□□	195	75	140	188.6	132	53	120
NEW EXEF20- 8-19□□	195	75	192	240.6	132	53	172
NEW EXEF20- 8-25□□	195	75	245	293.6	132	53	225
NEW EXEF20- 8-30□□	195	75	300	348.6	132	53	280
NEW EXEF20-10-14□□	195	95	140	188.6	132	73	120
NEW EXEF20-10-19□□	195	95	192	240.6	132	73	172
NEW EXEF20-10-25□□	195	95	245	293.6	132	73	225
NEW EXEF20-10-30□□	195	95	300	348.6	132	73	280
NEW EXEF20-12-14□□	195	120	140	188.6	132	98	120
NEW EXEF20-12-19□□	195	120	192	240.6	132	98	172
NEW EXEF20-12-25□□	195	120	245	293.6	132	98	225
NEW EXEF20-12-30□□	195	120	300	348.6	132	98	280
NEW EXEF24- 7-17□□	240	65	170	218.6	177	43	147
NEW EXEF24- 7-23□□	240	65	230	278.6	177	43	207
NEW EXEF24- 7-29□□	240	65	290	338.6	177	43	267
NEW EXEF24- 7-35□□	240	65	350	398.6	177	43	327
NEW EXEF24- 9-17□□	240	90	170	218.6	177	68	147
NEW EXEF24- 9-23□□	240	90	230	278.6	177	68	207
NEW EXEF24- 9-29□□	240	90	290	338.6	177	68	267
NEW EXEF24- 9-35□□	240	90	350	398.6	177	68	327
NEW EXEF24-12-17□□	240	115	170	218.6	177	93	147
NEW EXEF24-12-23□□	240	115	230	278.6	177	93	207
NEW EXEF24-12-29□□	240	115	290	338.6	177	93	267
NEW EXEF24-12-35□□	240	115	350	398.6	177	93	327



Following models are suitable for placement of a Mini-ITX board.

- EXEF20-8-19□□
- EXEF20-10-19□□
- EXEF20-12-19□□

How to install a shield gasket



■ Insert fabric-over-foam gasket into the joint-grooves on the bottom cover.



■ Ensure that a small portion of the fabric-over-foam gasket protrudes out in order to maintain a connection with the end panel.



- Waterproof case available in 67 different sizes and 6 different color combinations by 2 body frame and 3 end panel colors.
- Flanged end panels make it easy for wall mounting. Suitable to be used as wall mounted controller and transmitter.
- Custom length is available.

Technical Data
Protection class : IP65 • IP54
Protection class varies by size.
■ Not suitable for environments with direct rainfall

Included screw  
 EXWF7-□, 9-□ models : M2.5-8 x 8 pcs  
 EXWF12-□, 15-□ models : M3-10 x 8 pcs  
 EXWF20-□ models : M4-12 x 8 pcs  
 EXWF24-□ models : M5-12 x 8 pcs  
 ※Hexagonal wrench included.

Components

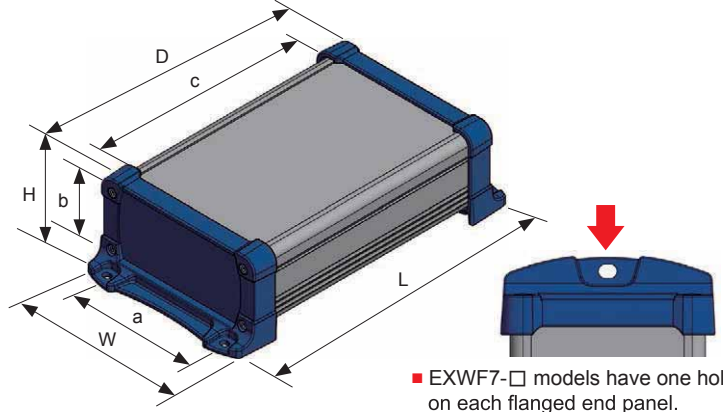
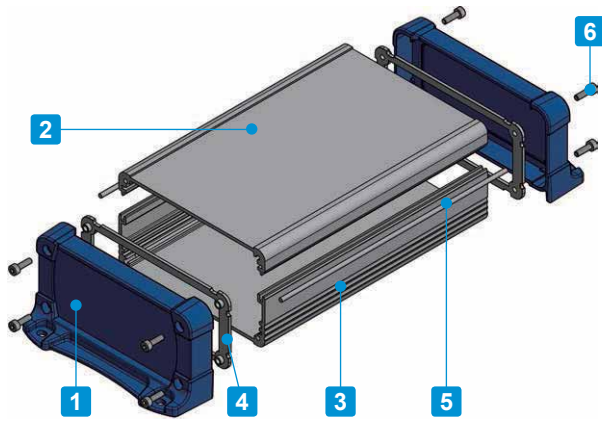
No.	Part name	Pcs	Material	Color / Finish
1	Flanged end panel	2	PC+ABS UL94V-0	Black • Gray / Unpainted Navy / Painted
2	Top cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Bottom cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
4	Panel gasket	2	Silicone	Black
5	Cover gasket	2	Silicone	White gray
6	Screw	8	Stainless Steel	Unfinished

Color Type

Code	S B Silver / Black	S G Silver / Gray	S N Silver / Navy
Color			
Code	B B Black / Black	B G Black / Gray	B N Black / Navy
Color			



DXF/DWG/PDF drawings available on our website.



EXWF7-□ models have one hole on each flanged end panel.

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

Product no. / Dimensions

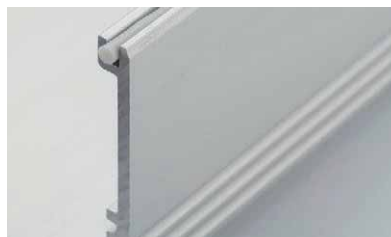
Product no.	Protection class	External dimensions				Internal dimensions		
		W	H	D	L	a	b	c
NEW EXWF 7- 3- 6□□	IP65	66	34	58	82	47	20	46
NEW EXWF 7- 3- 9□□	IP65	66	34	85	109	47	20	73
NEW EXWF 7- 3-11□□	IP65	66	34	108	132	47	20	96
NEW EXWF 7- 4- 6□□	IP65	66	44	58	82	47	30	46
NEW EXWF 7- 4- 9□□	IP65	66	44	85	109	47	30	73
NEW EXWF 7- 4-11□□	IP65	66	44	108	132	47	30	96
NEW EXWF 7- 6- 6□□	IP65	66	59	58	82	47	45	46
NEW EXWF 7- 6- 9□□	IP65	66	59	85	109	47	45	73
NEW EXWF 7- 6-11□□	IP65	66	59	108	132	47	45	96
NEW EXWF 9- 4- 7□□	IP65	86	39	69	94.8	67	25	56
NEW EXWF 9- 4-10□□	IP65	86	39	99	124.8	67	25	86
NEW EXWF 9- 4-13□□	IP65	86	39	129	154.8	67	25	116
NEW EXWF 9- 5- 7□□	IP65	86	49	69	94.8	67	35	56
NEW EXWF 9- 5-10□□	IP65	86	49	99	124.8	67	35	86
NEW EXWF 9- 5-13□□	IP65	86	49	129	154.8	67	35	116
NEW EXWF 9- 6- 7□□	IP65	86	64	69	94.8	67	50	56
NEW EXWF 9- 6-10□□	IP65	86	64	99	124.8	67	50	86
NEW EXWF 9- 6-13□□	IP65	86	64	129	154.8	67	50	116
NEW EXWF11- 4- 9□□	IP65	113	41.5	88	119.8	89	24	74
NEW EXWF11- 4-13□□	IP65	113	41.5	128	159.8	89	24	114
NEW EXWF11- 4-17□□	IP65	113	41.5	174	205.8	89	24	160
NEW EXWF11- 6- 9□□	IP65	113	56.5	88	119.8	89	39	74
NEW EXWF11- 6-13□□	IP65	113	56.5	128	159.8	89	39	114
NEW EXWF11- 6-17□□	IP65	113	56.5	174	205.8	89	39	160
NEW EXWF11- 7- 9□□	IP65	113	71.5	88	119.8	89	54	74
NEW EXWF11- 7-13□□	IP65	113	71.5	128	159.8	89	54	114
NEW EXWF11- 7-17□□	IP65	113	71.5	174	205.8	89	54	160
NEW EXWF15- 5-11□□	IP65	148	47	107	146.2	107	29	93
NEW EXWF15- 5-15□□	IP65	148	47	147	186.2	107	29	133
NEW EXWF15- 5-20□□	IP65	148	47	197	236.2	107	29	183
NEW EXWF15- 6-11□□	IP65	148	62	107	146.2	107	44	93
NEW EXWF15- 6-15□□	IP65	148	62	147	186.2	107	44	133
NEW EXWF15- 6-20□□	IP65	148	62	197	236.2	107	44	183
NEW EXWF15- 8-11□□	IP65	148	82	107	146.2	107	64	93
NEW EXWF15- 8-15□□	IP65	148	82	147	186.2	107	64	133
NEW EXWF15- 8-20□□	IP65	148	82	197	236.2	107	64	183
NEW EXWF15-10-11□□	IP65	148	102	107	146.2	107	84	93
NEW EXWF15-10-15□□	IP65	148	102	147	186.2	107	84	133
NEW EXWF15-10-20□□	IP65	148	102	197	236.2	107	84	183

Product no.	Protection class	External dimensions				Internal dimensions		
		W	H	D	L	a	b	c
NEW EXWF20- 6-14□□	IP54	195	57	138	186.6	132	35	120
NEW EXWF20- 6-19□□	IP54	195	57	190	238.6	132	35	172
NEW EXWF20- 6-25□□	IP54	195	57	243	291.6	132	35	225
NEW EXWF20- 6-30□□	IP54	195	57	298	346.6	132	35	280
NEW EXWF20- 8-14□□	IP54	195	75	138	186.6	132	53	120
NEW EXWF20- 8-19□□	IP54	195	75	190	238.6	132	53	172
NEW EXWF20- 8-25□□	IP54	195	75	243	291.6	132	53	225
NEW EXWF20- 8-30□□	IP54	195	75	298	346.6	132	53	280
NEW EXWF20-10-14□□	IP54	195	95	138	186.6	132	73	120
NEW EXWF20-10-19□□	IP54	195	95	190	238.6	132	73	172
NEW EXWF20-10-25□□	IP54	195	95	243	291.6	132	73	225
NEW EXWF20-10-30□□	IP54	195	95	298	346.6	132	73	280
NEW EXWF20-12-14□□	IP54	195	120	138	186.6	132	98	120
NEW EXWF20-12-19□□	IP54	195	120	190	238.6	132	98	172
NEW EXWF20-12-25□□	IP54	195	120	243	291.6	132	98	225
NEW EXWF20-12-30□□	IP54	195	120	298	346.6	132	98	280
NEW EXWF24- 7-17□□	IP54	240	65	165	213.6	177	43	147
NEW EXWF24- 7-23□□	IP54	240	65	225	273.6	177	43	207
NEW EXWF24- 7-29□□	IP54	240	65	285	333.6	177	43	267
NEW EXWF24- 7-35□□	IP54	240	65	345	393.6	177	43	327
NEW EXWF24- 9-17□□	IP54	240	90	165	213.6	177	68	147
NEW EXWF24- 9-23□□	IP54	240	90	225	273.6	177	68	207
NEW EXWF24- 9-29□□	IP54	240	90	285	333.6	177	68	267
NEW EXWF24- 9-35□□	IP54	240	90	345	393.6	177	68	327
NEW EXWF24-12-17□□	IP54	240	115	165	213.6	177	93	147
NEW EXWF24-12-23□□	IP54	240	115	225	273.6	177	93	207
NEW EXWF24-12-29□□	IP54	240	115	285	333.6	177	93	267
NEW EXWF24-12-35□□	IP54	240	115	345	393.6	177	93	327

How to install cover gasket



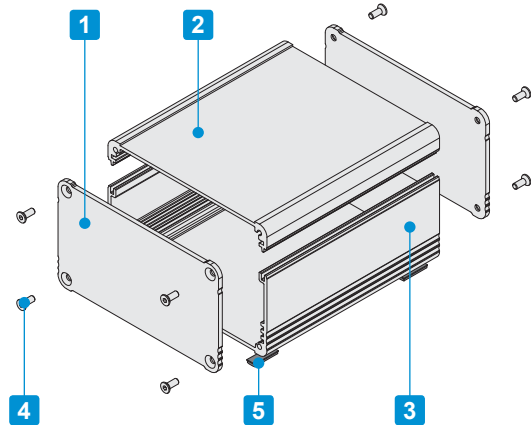
Insert cover gaskets into the joint-grooves on the bottom cover.



Ensure that a small portion of the cover gasket protrudes out in order to maintain a seal with the panel gasket.



- Simple yet beautifully designed aluminium extrusion enclosure.
- Selectable in 4 different color combinations.
- Beautiful high-end finish is achieved by precision CNC finishing.
- Suitable for industrial and audio interface equipment.
- Custom length is available.



Components

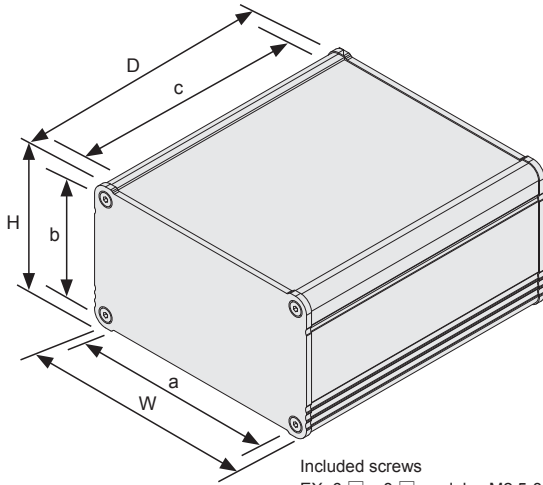
No.	Part name	Pcs	Material	Color / Finish
1	End panel	2	Aluminium A1050P	Silver • Black / Anodized
2	Top cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Bottom cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
4	Screw	8	Stainless steel	Unfinished
5	Rubber feet	4	Polyurethane	Black

■ See page 149 ~ 152 for Top / Bottom cover dimensions.

Color Type

Code	S S Silver / Silver	S B Silver / Black	B S Black / Silver	B B Black / Black
Color				

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



Included screws  
EX 6-□, 8-□ models : M2.5-8 x 8 pcs  
EX11-□, 14-□ models : M3-8 x 8 pcs  
EX19-□ models : M4-10 x 8 pcs  
EX23-□ models : M5-10 x 8 pcs  
※Hexagonal wrench included.

Accessories (Optional parts)



Wall mounting bracket EF series  
See page 182

Product no. / Dimensions

Product no.	Dimensions (External)			Dimensions (Internal)		
	W	H	D	a	b	c
EX 6- 3- 5□□	60.6	25.6	50	47	19.6	46
EX 6- 3- 8□□	60.6	25.6	77	47	19.6	73
EX 6- 3-10□□	60.6	25.6	100	47	19.6	96
EX 6- 4- 5□□	60.6	35.6	50	47	29.6	46
EX 6- 4- 8□□	60.6	35.6	77	47	29.6	73
EX 6- 4-10□□	60.6	35.6	100	47	29.6	96
EX 6- 5- 5□□	60.6	50.6	50	47	44.6	46
EX 6- 5- 8□□	60.6	50.6	77	47	44.6	73
EX 6- 5-10□□	60.6	50.6	100	47	44.6	96
EX 8- 3- 6□□	80.6	30.6	60	67	24.6	56
EX 8- 3- 9□□	80.6	30.6	90	67	24.6	86
EX 8- 3-12□□	80.6	30.6	120	67	24.6	116
EX 8- 4- 6□□	80.6	40.6	60	67	34.6	56
EX 8- 4- 9□□	80.6	40.6	90	67	34.6	86
EX 8- 4-12□□	80.6	40.6	120	67	34.6	116
EX 8- 6- 6□□	80.6	55.6	60	67	49.6	56
EX 8- 6- 9□□	80.6	55.6	90	67	49.6	86
EX 8- 6-12□□	80.6	55.6	120	67	49.6	116
EX11- 3- 8□□	106	31	79	89	24	74
EX11- 3-12□□	106	31	119	89	24	114
EX11- 3-16□□	106	31	165	89	24	160
EX11- 5- 8□□	106	46	79	89	39	74
EX11- 5-12□□	106	46	119	89	39	114
EX11- 5-16□□	106	46	165	89	39	160
EX11- 6- 8□□	106	61	79	89	54	74
EX11- 6-12□□	106	61	119	89	54	114
EX11- 6-16□□	106	61	165	89	54	160
EX14- 4-10□□	141	36	98	107.4	29	93
EX14- 4-14□□	141	36	138	107.4	29	133
EX14- 4-19□□	141	36	188	107.4	29	183
EX14- 5-10□□	141	51	98	107.4	44	93
EX14- 5-14□□	141	51	138	107.4	44	133
EX14- 5-19□□	141	51	188	107.4	44	183
EX14- 7-10□□	141	71	98	107.4	64	93
EX14- 7-14□□	141	71	138	107.4	64	133
EX14- 7-19□□	141	71	188	107.4	64	183
EX14- 9-10□□	141	91	98	107.4	84	93
EX14- 9-14□□	141	91	138	107.4	84	133
EX14- 9-19□□	141	91	188	107.4	84	183

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

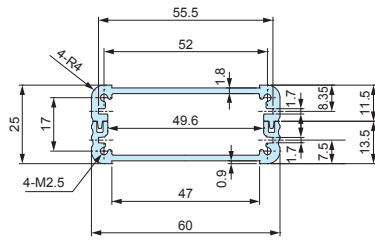
Product no.	Dimensions (External)			Dimensions (Internal)		
	W	H	D	a	b	c
NEW EX19- 4-13□□	186.5	43.5	125	132	35	120
NEW EX19- 4-18□□	186.5	43.5	177	132	35	172
NEW EX19- 4-23□□	186.5	43.5	230	132	35	225
NEW EX19- 4-29□□	186.5	43.5	285	132	35	280
NEW EX19- 6-13□□	186.5	61.5	125	132	53	120
NEW EX19- 6-18□□	186.5	61.5	177	132	53	172
NEW EX19- 6-23□□	186.5	61.5	230	132	53	225
NEW EX19- 6-29□□	186.5	61.5	285	132	53	280
NEW EX19- 8-13□□	186.5	81.5	125	132	73	120
NEW EX19- 8-18□□	186.5	81.5	177	132	73	172
NEW EX19- 8-23□□	186.5	81.5	230	132	73	225
NEW EX19- 8-29□□	186.5	81.5	285	132	73	280
NEW EX19-11-13□□	186.5	106.5	125	132	98	120
NEW EX19-11-18□□	186.5	106.5	177	132	98	172
NEW EX19-11-23□□	186.5	106.5	230	132	98	225
NEW EX19-11-29□□	186.5	106.5	285	132	98	280
NEW EX23- 5-15□□	232	52	153	177	43	147
NEW EX23- 5-21□□	232	52	213	177	43	207
NEW EX23- 5-27□□	232	52	273	177	43	267
NEW EX23- 5-33□□	232	52	333	177	43	327
NEW EX23- 8-15□□	232	77	153	177	68	147
NEW EX23- 8-21□□	232	77	213	177	68	207
NEW EX23- 8-27□□	232	77	273	177	68	267
NEW EX23- 8-33□□	232	77	333	177	68	327
NEW EX23-10-15□□	232	102	153	177	93	147
NEW EX23-10-21□□	232	102	213	177	93	207
NEW EX23-10-27□□	232	102	273	177	93	267
NEW EX23-10-33□□	232	102	333	177	93	327



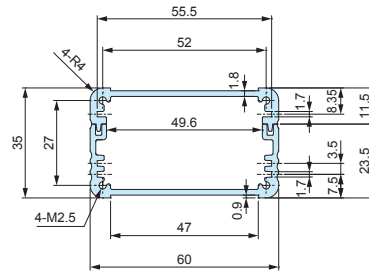
EXP • EXPE • EXW • EXPF • EXEF • EXWF • EX top / bottom covers

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

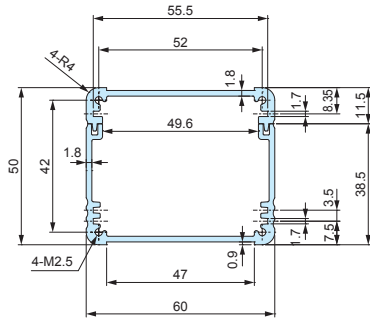
EXP • EXPE • EXW • EXPF • EXEF • EXWF7-4-□  
EX6-3-□



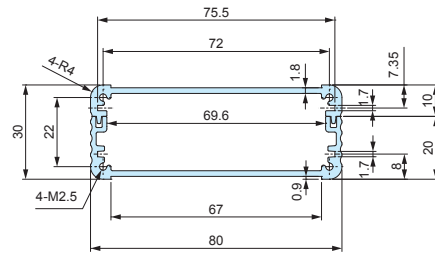
EXP • EXPE • EXW • EXPF • EXEF • EXWF7-4-□  
EX6-4-□



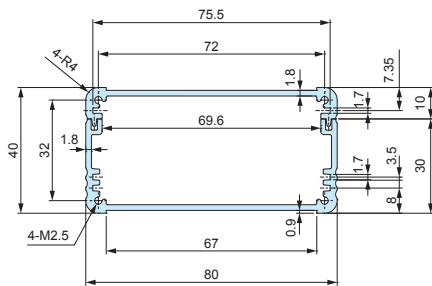
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EX6-5-□



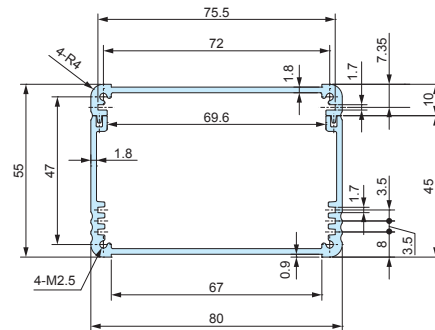
EXP • EXPE • EXW • EXPF • EXEF • EXWF9-4-□  
EX8-3-□



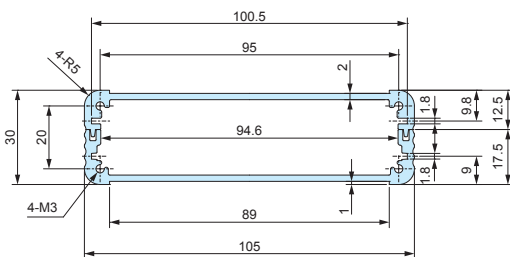
EXP • EXPE • EXW • EXPF • EXEF • EXWF9-5-□  
EX8-4-□



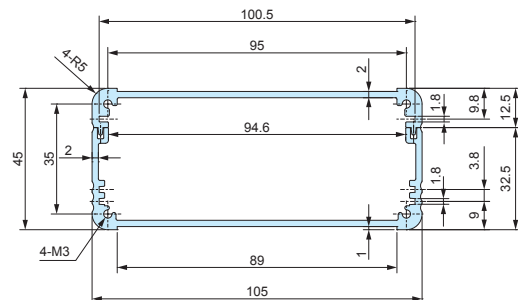
EXP • EXPE • EXW • EXPF • EXEF • EXWF9-6-□  
EX8-6-□



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



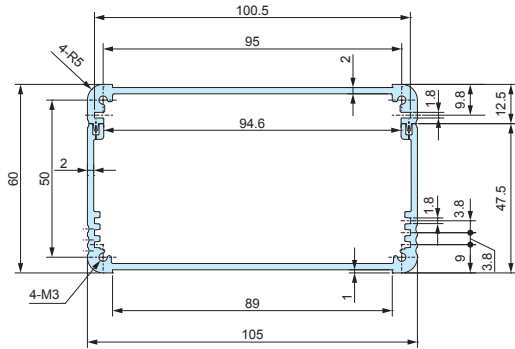
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EXPF • EXEF • EXWF11-6-□  
EX11-5-□



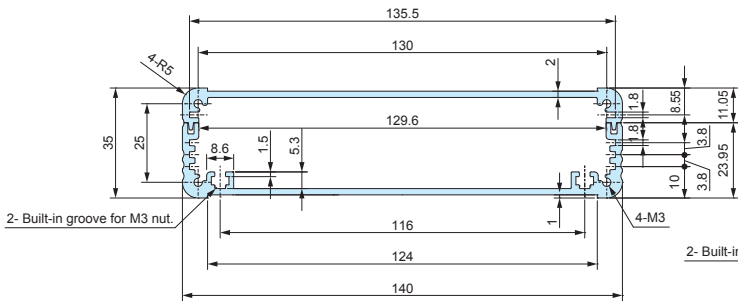
EXP • EXPE • EXW • EXPF • EXEF • EXWF • EX top / bottom covers

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

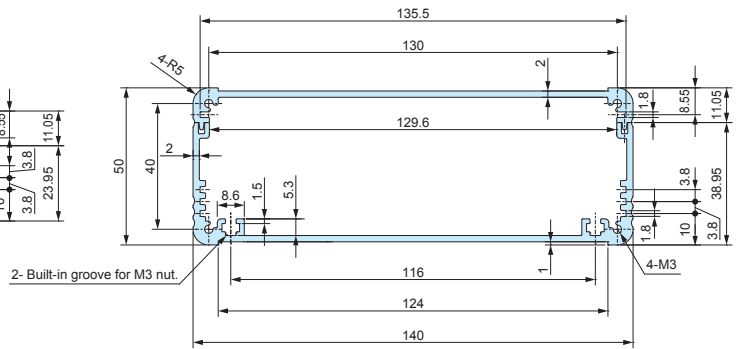
EXP • EXPE • EXW12-7-□  
EXPF • EXEF • EXWF11-7-□  
EX11-6-□



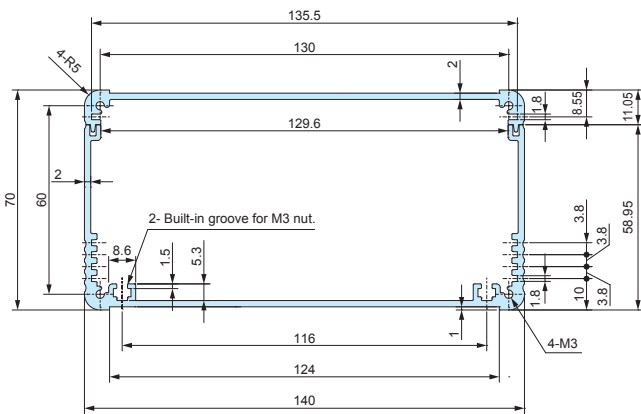
EXP • EXPE • EXW • EXPF • EXEF • EXWF15-5-□  
EX14-4-□



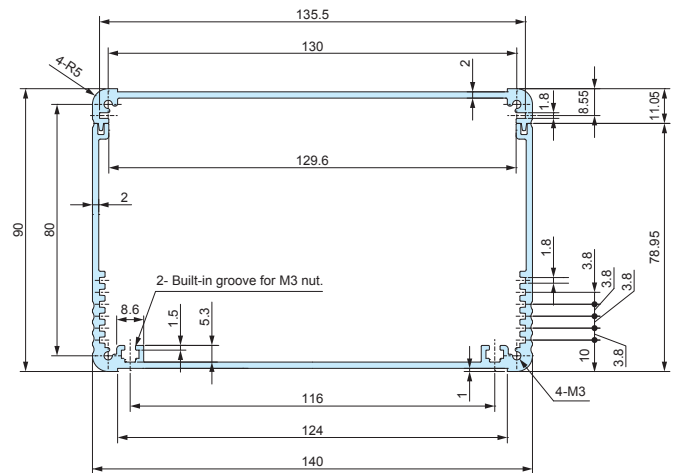
EXP • EXPE • EXW • EXPF • EXEF • EXWF15-6-□  
EX14-5-□



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



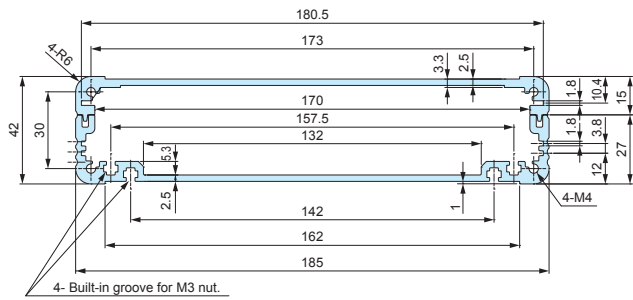
EXP • EXPE • EXW • EXPF • EXEF • EXWF15-10-□  
EX14-9-□



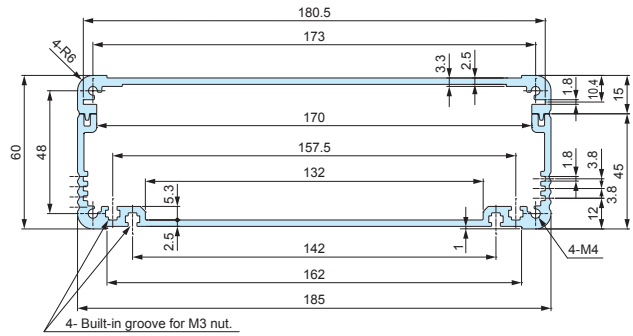
EXP • EXPE • EXPF • EXEF • EXWF • EX top / bottom covers

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

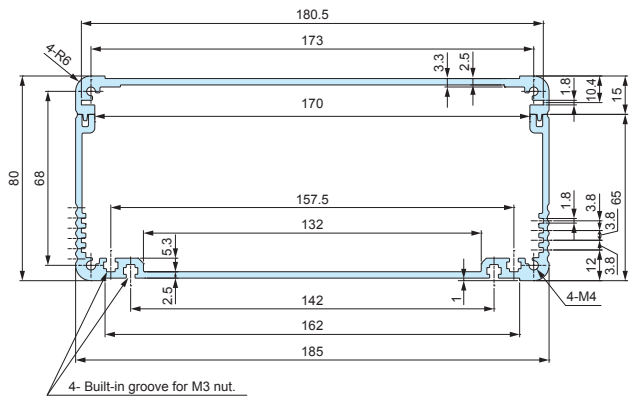
EXP • EXPE • EXPF • EXEF • EXWF20-6-□  
EX19-4-□



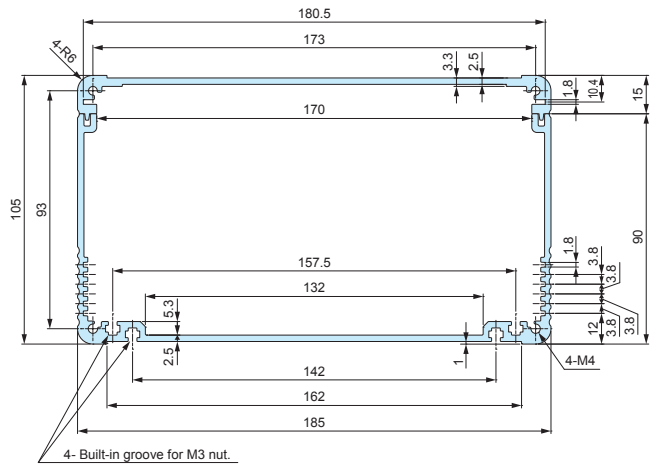
EXP • EXPE20-7-□  
EXPF • EXEF • EXWF20-8-□  
EX19-6-□



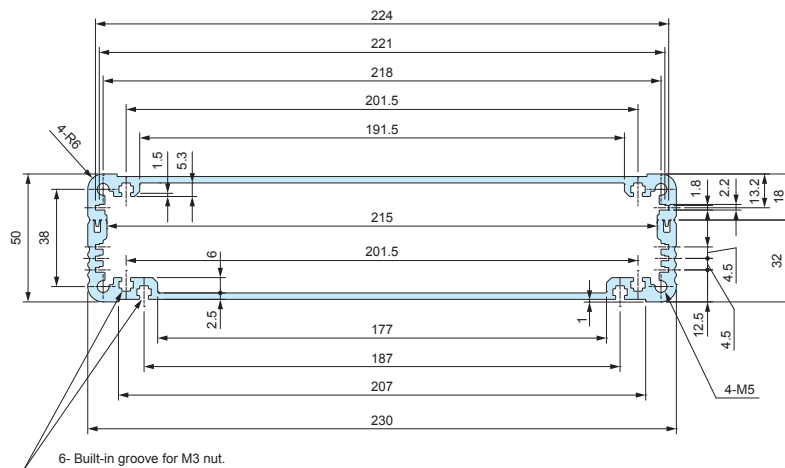
EXP • EXPE20-9-□  
EXPF • EXEF • EXWF20-10-□  
EX19-8-□



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



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

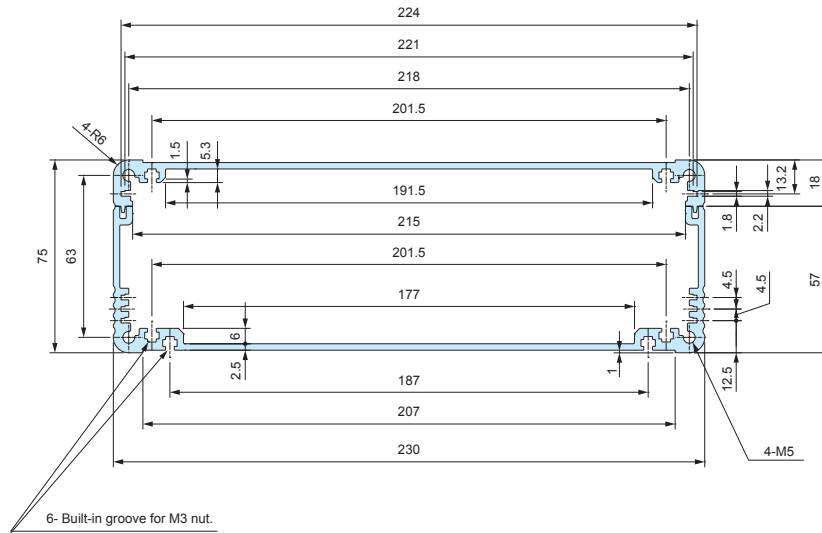




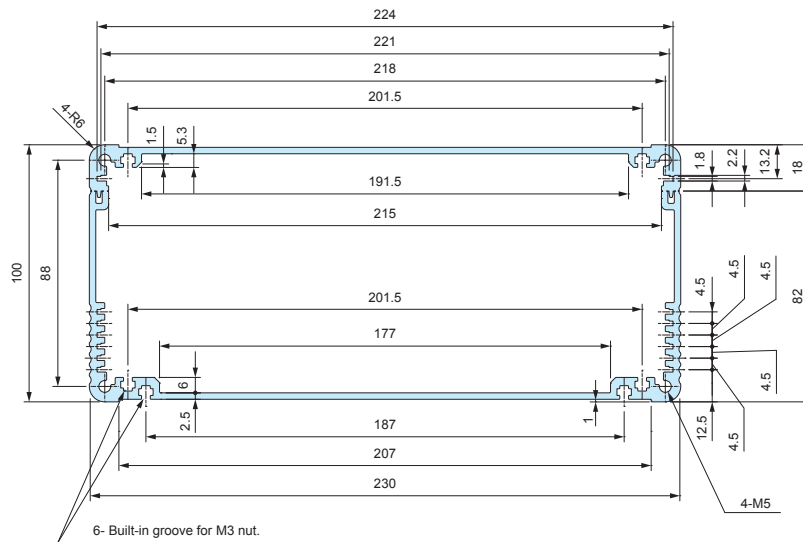
EXP • EXPE • EXPF • EXEF • EXWF • EX top / bottom covers

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

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

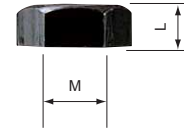
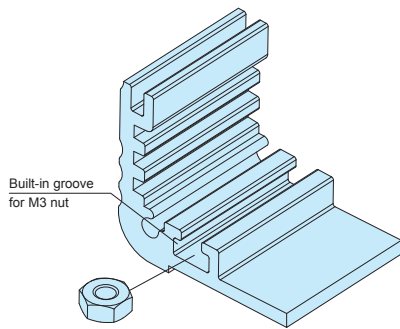


EXP • EXPE24-11-□  
EXPF • EXEF • EXWF24-12-□  
EX23-10-□



**MT-3N**

**SLIDING NUT for EXP • EXPE • EXW • EXPF • EXEF • EXWF • EX**



**Product no. / Dimensions**

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

- Sliding nut can be used on all EXP • EXPE • EXW • EXPF • EXEF • EXWF • EX models with width 140mm or larger bottom covers, as well as with width 230mm top covers.

**EXEG SERIES**

**EMC SHIELDING FABRIC-OVER-FOAM GASKET for EXPE • EXEF**



- EMC shielding fabric-over-foam gasket for EXPE • EXEF series.

**Suitable Enclosure**

Product no.	Suitable enclosure
EXEG-2.5	EXPE7-□ • 9-□ • 12-□ • 15-□ / EXEF7-□ • 9-□ • 11-□ • 15-□
EXEG-3.2	EXPE20-□ • 24-□ / EXEF20-□ • 24-□



EMC Shielding Effects

**Product no. / Dimensions**

Product no.	Φ	Material	Color	Sales unit
EXEG-2.5	2.5	Wire mesh gasket • TPE	Metallic gray	500mm x 1 pc
<b>NEW</b> EXEG-3.2	3.2	Wire mesh gasket • TPE	Metallic gray	500mm x 1 pc

Length tolerance = +/- 10%

**APPLICATION EXAMPLE EX series**

**PREMAIN POWER AMPLIFIER**

Product by AY-densi (Japan)



**USB EDGE NODE**

Product by SHINWA (Japan)





Application Example

- Double shot injection molded feet with soft and well-designed rounded shape.
- Non-slip design with Elastomer (TPE) pad.
- Available in 3 different color patterns.

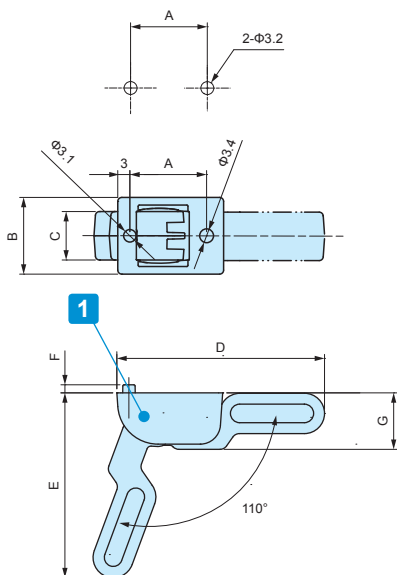
Technical Data
Max load : 7kg

**Components**

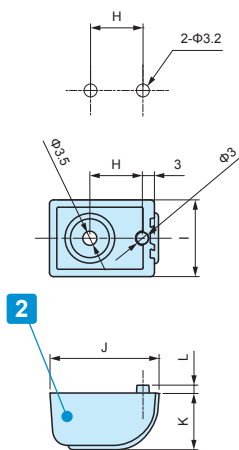
No.	Part name	Pcs	Material	Color / Finish
1	Front feet	2	PC+ABS UL94V-0, TPE	Black & Black • Navy & Gray • Light gray & Gray
2	Rear Feet	2	PC+ABS UL94V-0, TPE	Black & Black • Navy & Gray • Light gray & Gray
-	Washer head screw	4	Steel M3-6	Black Trivalent chromate
-	Nut	4	Steel M3	Black Trivalent chromate

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

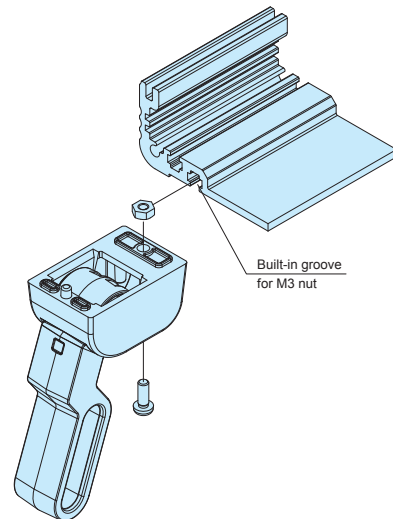
Mounting hole (Front)



Mounting Hole (Rear)



- Possible to install on Built-in groove with M3 nut for all EXP • EXPE • EXW • EX • EXH models with width 185mm or larger bottom covers.
- TLW-70E models are exclusively for width 185mm or larger bottom covers.



**Product no. / Dimensions**

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



# AW · AWN · AWP IP67 ALUMINIUM ENCLOSURE

AW · AWN · AWP series are highly functional aluminium enclosures which are IP67 rated with heat dissipating heat-sink fins.

34 sizes available. Standard, Flanged, Shielding, and Silicone protector types are available. Suitable for LED power supply, industrial camera, controller or measuring instrument where waterproof and cooling performance are crucial.

## APPLICATION EXAMPLE

### LIQUID LEVEL SENSOR

Product by Watty Corporation (Japan)



### HEAVY DUTY PORTABLE HARDNESS TESTER

Product by DEMEQ (Argentina)



### RADIO-CONTROLLED ELECTRONIC EXPLODER

Product by CODETEL (France)



### OUTDOOR LED POWER SUPPLY



### OPTICAL PHASE INTERROGATOR (OPI) DEVELOPMENT KIT

Product by Broadcom Limited (USA)



### FBG DATA LOGGER

Product by NAGANO KEIKI (Japan)



### DATA LOGGER with 3G MODEM REPORT FUNCTION

Product by mSolution (Hong Kong)



### PIN HOLE DETECTOR

Product by SANKO ELECTRONIC LABORATORY (Japan)



### PD ANNUNCIATOR

Product by ndb Technologies (Canada)



### DC CONVERTER



### CUSTOM LENGTH AVAILABLE

Flexible frame length from 50mm to 700mm in 1mm intervals.

No minimum order quantity and short lead time for small quantity order.



# AW SERIES

# IP67 FLANGED ALUMINIUM ENCLOSURE



- IP67 and heat dissipation enclosure. Designed with flanged end panels.
- PCB or chassis is mounted by sliding it horizontally into an inner-grooved body frame.
- Designed for a tough environment where waterproof and heat countermeasures are required.
- Suitable for outdoor use such as LED power supply and junction boxes.

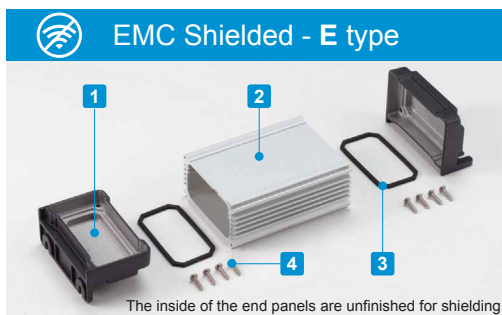
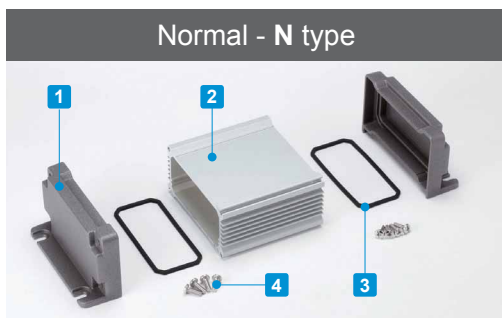
Technical Data
Protection class: IP67
Operating temperature: -40°C ~ +105°C
Recommended torque: 1.0N • m (10kgf • cm)

### Normal N type Components

No.	Part name	Pcs	Material	Color / Finish
1	Flanged end panel	2	Diecast aluminium ADC12	Metallic gray • Black / Powder coated
2	Body frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Gasket	2	Silicone	Black
4	Screw	8	Stainless steel	Unfinished

### EMC Shielded E type Components

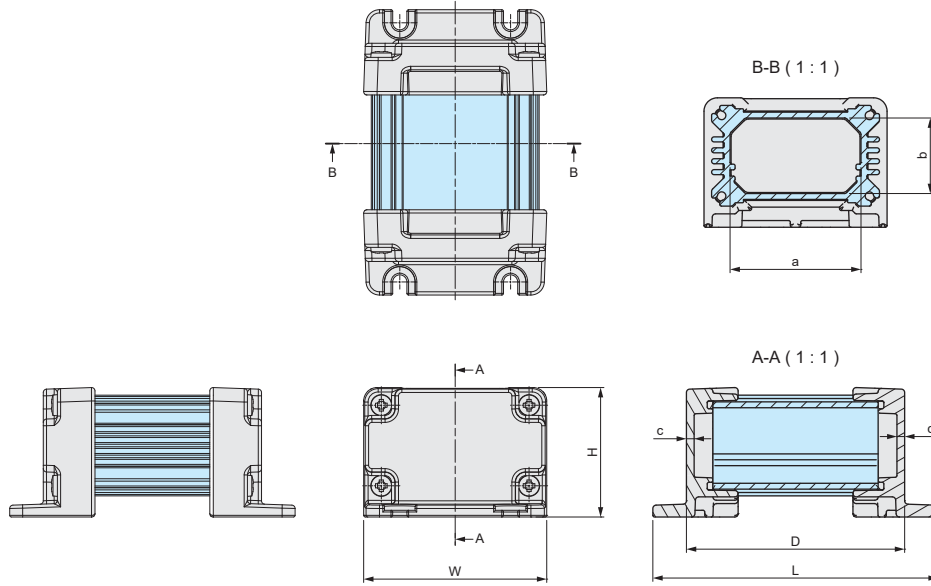
No.	Part name	Pcs	Material	Color / Finish
1	Flanged end panel	2	Diecast aluminium ADC12	Silver • Black / Painted (unfinished inside)
2	Body frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Gasket	2	Silicone	Black
4	Screw	8	Stainless steel	Unfinished





AW dimensions

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



Product no. / Dimensions

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

Product no.	W	H	D	L	a	b	c	Weight (g)
AW 5-4- 7□□□	54.6	38.6	65	85	39	22.5	2.3	128.5
AW 5-4- 9□□□	54.6	38.6	85	105	39	22.5	2.3	149
AW 5-4-11□□□	54.6	38.6	110	130	39	22.5	2.3	175
AW 5-4-14□□□	54.6	38.6	135	155	39	22.5	2.3	201.5
AW 7-7- 8□□□	65.8	70.8	80	106	47	51	2.5	294.5
AW 7-7-11□□□	65.8	70.8	110	136	47	51	2.5	350
AW 7-7-15□□□	65.8	70.8	150	176	47	51	2.5	424.5
AW 7-7-20□□□	65.8	70.8	200	226	47	51	2.5	517
AW 7-7-25□□□	65.8	70.8	250	276	47	51	2.5	610
AW 8-5- 9□□□	80.8	50.8	90	116	62	31	2.5	289.5
AW 8-5-12□□□	80.8	50.8	115	141	62	31	2.5	330.5
AW 8-5-14□□□	80.8	50.8	140	166	62	31	2.5	372
AW 8-5-18□□□	80.8	50.8	175	201	62	31	2.5	429.5
AW 9-9-10□□□	86.3	92	100	129	66.5	66.5	3	560.5
AW 9-9-13□□□	86.3	92	125	154	66.5	66.5	3	633.5
AW 9-9-17□□□	86.3	92	170	199	66.5	66.5	3	764.5
AW 9-9-22□□□	86.3	92	220	249	66.5	66.5	3	910.5
AW 9-9-28□□□	86.3	92	275	304	66.5	66.5	3	1,071
AW11-6-11□□□	106.3	62	110	139	86.5	36.5	3	526.5
AW11-6-15□□□	106.3	62	150	179	86.5	36.5	3	625
AW11-6-19□□□	106.3	62	190	219	86.5	36.5	3	723.5
AW11-6-24□□□	106.3	62	240	269	86.5	36.5	3	847
AW12-8-11□□□	120	77	105	134	100.2	51.5	3	614.5
AW12-8-14□□□	120	77	140	169	100.2	51.5	3	720.5
AW12-8-17□□□	120	77	179.5	208.5	100.2	51.5	3	840
AW12-8-22□□□	120	77	215	244	100.2	51.5	3	947.5
AW16-9-14□□□	156.3	87	135	164	136.5	61.5	3	945.5
AW16-9-18□□□	156.3	87	175	204	136.5	61.5	3	1,092.5
AW16-9-23□□□	156.3	87	225	254	136.5	61.5	3	1,275.5
AW16-9-28□□□	156.3	87	275	304	136.5	61.5	3	1,459
AW21-9-17□□□	206.3	87	170	199	186.5	61.5	3	1,303
AW21-9-21□□□	206.3	87	210	239	186.5	61.5	3	1,473.5
AW21-9-26□□□	206.3	87	260	289	186.5	61.5	3	1,686.5
AW21-9-31□□□	206.3	87	310	339	186.5	61.5	3	1,899.5

Accessories (Optional parts)



Mounting plate □AWC series  
See page 170



Hexagon socket head screw HCS series  
See page 170



Cable gland  
See cable gland pages



Pole mounting bracket SSK series  
See page SSK-M-1 ~ SSK-M-3



Protective vent PMF series  
See page PMF-1 ~ PMF-3



# AWN SERIES

# IP67 HEAT-SINK ALUMINIUM ENCLOSURE



- IP67 and heat dissipation enclosure design. Selectable in both Normal or EMC Shielded type.
- The extruded aluminium frame and diecast aluminium panels makes it extremely suitable to be used in harsh environments where waterproofing and heat dissipation is essential.
- PCB or chassis can be mounted by sliding it horizontally into inner-grooved body frame.
- Suitable for measuring instruments, industrial control box, and industrial camera housing, among others.

Technical Data
Protection class: IP67
Operating temperature: -40°C ~ +105°C
Recommended torque: 1.0N • m (10kgf • cm)

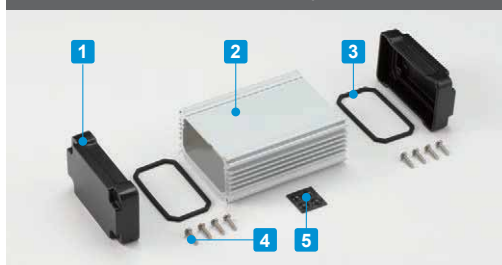
### Normal N type Components

No.	Part name	Pcs	Material	Color / Finish
1	End Panel	2	Diecast aluminium ADC12	Metallic gray • Black / Powder coated
2	Body frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Gasket	2	Silicone	Black
4	Screw	8	Stainless steel	Unfinished
5	Rubber feet	4	Polyurethane	Black

### EMC Shielded E type Components

No.	Part name	Pcs	Material	Color / Finish
1	End Panel	2	Diecast aluminium ADC12	Silver • Black / Painted (unfinished inside)
2	Body frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Gasket	2	Silicone	Black
4	Screw	8	Stainless steel	Unfinished
5	Rubber feet	4	Polyurethane	Black

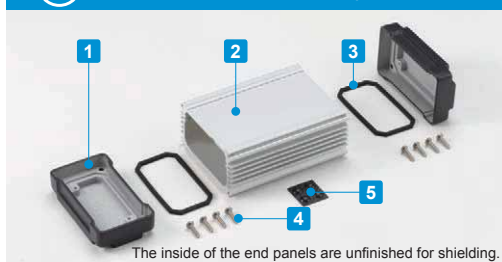
### Normal - N type



### Color type



### EMC Shielded - E type

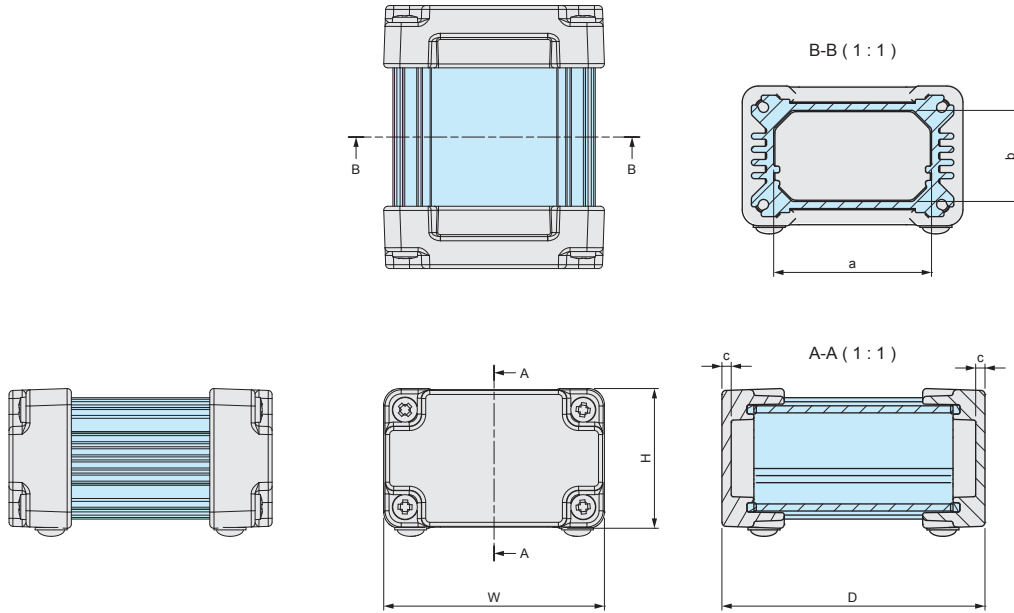


### Color type



**AWN dimensions**

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



**Product no. / Dimensions**

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

Product no.	W	H	D	a	b	c	Weight (g)
AWN 5-4- 7□□□	54.6	34.6	65	39	22.5	2.3	118.5
AWN 5-4- 9□□□	54.6	34.6	85	39	22.5	2.3	139
AWN 5-4-11□□□	54.6	34.6	110	39	22.5	2.3	165
AWN 5-4-14□□□	54.6	34.6	135	39	22.5	2.3	191.5
AWN 7-7- 8□□□	65.8	65.8	80	47	51	2.5	272.5
AWN 7-7-11□□□	65.8	65.8	110	47	51	2.5	328
AWN 7-7-15□□□	65.8	65.8	150	47	51	2.5	402.5
AWN 7-7-20□□□	65.8	65.8	200	47	51	2.5	495
AWN 7-7-25□□□	65.8	65.8	250	47	51	2.5	588
AWN 8-5- 9□□□	80.8	45.8	90	62	31	2.5	259.5
AWN 8-5-12□□□	80.8	45.8	115	62	31	2.5	300.5
AWN 8-5-14□□□	80.8	45.8	140	62	31	2.5	342
AWN 8-5-18□□□	80.8	45.8	175	62	31	2.5	399.5
AWN 9-9-10□□□	86.3	86.3	100	66.5	66.5	3	521.5
AWN 9-9-13□□□	86.3	86.3	125	66.5	66.5	3	594.5
AWN 9-9-17□□□	86.3	86.3	170	66.5	66.5	3	725.5
AWN 9-9-22□□□	86.3	86.3	220	66.5	66.5	3	871.5
AWN 9-9-28□□□	86.3	86.3	275	66.5	66.5	3	1,032
AWN11-6-11□□□	106.3	56.3	110	86.5	36.5	3	479.5
AWN11-6-15□□□	106.3	56.3	150	86.5	36.5	3	578
AWN11-6-19□□□	106.3	56.3	190	86.5	36.5	3	676.5
AWN11-6-24□□□	106.3	56.3	240	86.5	36.5	3	800
AWN12-8-11□□□	120	71.3	105	100.2	51.5	3	590.5
AWN12-8-14□□□	120	71.3	140	100.2	51.5	3	696.5
AWN12-8-17□□□	120	71.3	179.5	100.2	51.5	3	816
AWN12-8-22□□□	120	71.3	215	100.2	51.5	3	923.5
AWN16-9-14□□□	156.3	81.3	135	136.5	61.5	3	871.5
AWN16-9-18□□□	156.3	81.3	175	136.5	61.5	3	1,018.5
AWN16-9-23□□□	156.3	81.3	225	136.5	61.5	3	1,201.5
AWN16-9-28□□□	156.3	81.3	275	136.5	61.5	3	1,385
AWN21-9-17□□□	206.3	81.3	170	186.5	61.5	3	1,261
AWN21-9-21□□□	206.3	81.3	210	186.5	61.5	3	1,431.5
AWN21-9-26□□□	206.3	81.3	260	186.5	61.5	3	1,644.5
AWN21-9-31□□□	206.3	81.3	310	186.5	61.5	3	1,857.5

**Accessories (Optional parts)**



Mounting plate AWC series  
See page 170



Hexagon socket head screw HCS series  
See page 170



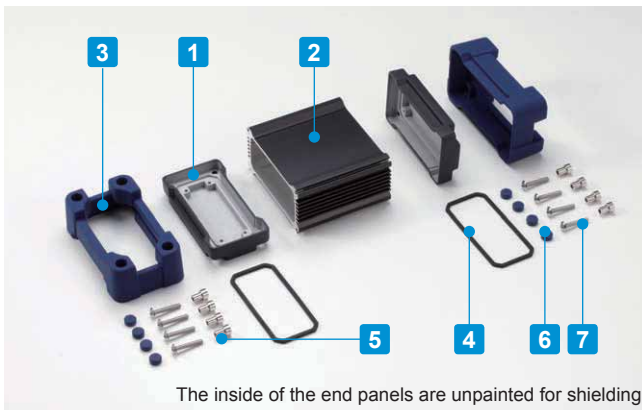
Cable gland  
See cable gland pages



Silicone protector AWSP series  
See page 169



Technical Data
Protection class: IP67
Operating temperature: -40°C ~ +105°C
Recommended torque: 1.0N • m (10kgf • cm)



- Strong impact resistant enclosure with tough silicone boot protectors.
- Specifically designed with heat dissipation effect, EMC shielding and IP67 rating.
- PCB or chassis can be horizontally mounted by sliding into an inner-grooved body frame.
- Available in 30 sizes and 8 different color combinations. Selectable from a total of 240 different combinations.
- Suitable for measuring instruments, industrial control box, industrial camera housing, etc.

**Components**

No.	Part name	Pcs	Material	Color / Finish
1	End panel	2	Diecast aluminium ADC12	Silver • Black / Painted (unfinished inside)
2	Body frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Protector	2	Silicone	Black • Gray • Navy • Yellow
4	Conductive gasket	2	Conductive silicone	Black
5	Spacer	8	Brass	Nickel plated
6	Blind cap	8	Silicone	Black • Gray • Navy • Yellow
7	Screw	8	Stainless steel	Unfinished

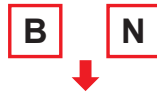
Color Type



Ordering Number

For example, in case of ordering AWP7-7-8 size, Black enclosure and Navy silicone protector.

Product no. : AWP7-7-8



Put a color code SB, SG, SN, SY, BB, BG, BN or BY.

- ※ Thermal resistance test condition
- Ambient air cooling
- Heat-sink fins are set perpendicular to the ground with temperature at 60°C.
- Anodized aluminium extrusion
- Heat source is applied on the opposite side (inner side) of the fins.

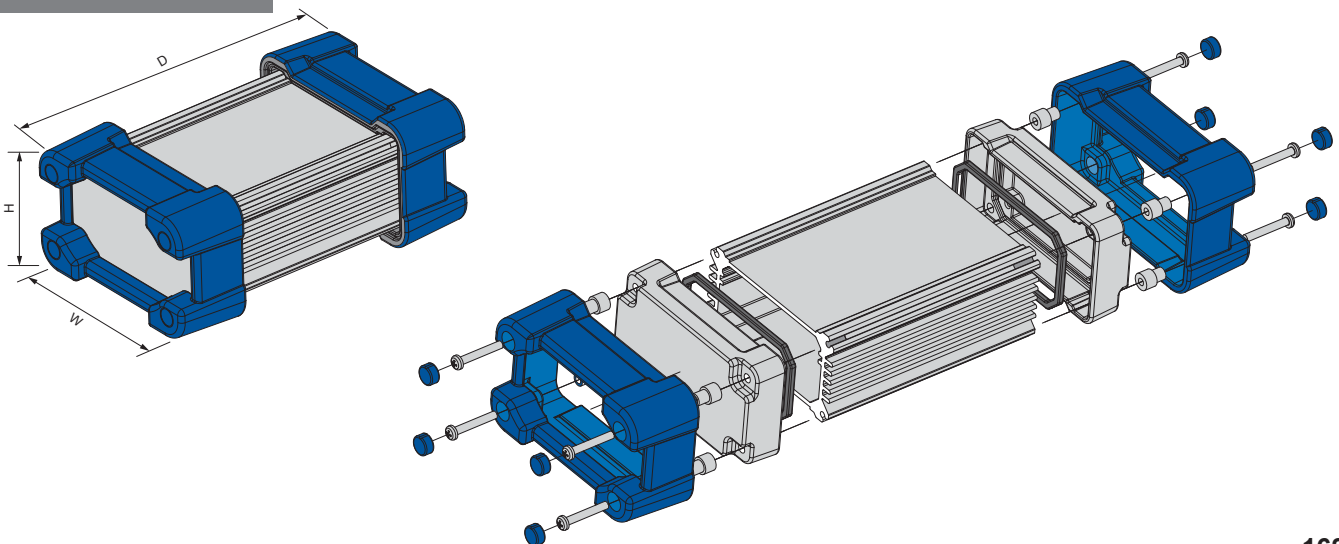
Product no. / Dimensions

Product no.	W	H	D	※Thermal resistance rate (°C/W)	Weight (g)
AWP 7-7- 8□□	72.4(65.8)	73.6(65.8)	104 (80)	4.41	363.5
AWP 7-7-11□□	72.4(65.8)	73.6(65.8)	134(110)	3.5	419
AWP 7-7-15□□	72.4(65.8)	73.6(65.8)	174(150)	2.83	493.5
AWP 7-7-20□□	72.4(65.8)	73.6(65.8)	224(200)	2.33	586
AWP 7-7-25□□	72.4(65.8)	73.6(65.8)	274(250)	2.02	679
AWP 8-5- 9□□	87.4(80.8)	53.6(45.8)	114 (90)	5.97	353.5
AWP 8-5-12□□	87.4(80.8)	53.6(45.8)	139(115)	5.01	394.5
AWP 8-5-14□□	87.4(80.8)	53.6(45.8)	164(140)	4.37	436
AWP 8-5-18□□	87.4(80.8)	53.6(45.8)	199(175)	3.76	493.5
AWP 9-9-10□□	93.9(86.3)	95.1(86.3)	130(100)	3.1	693
AWP 9-9-13□□	93.9(86.3)	95.1(86.3)	155(125)	2.63	766
AWP 9-9-17□□	93.9(86.3)	95.1(86.3)	200(170)	2.12	897
AWP 9-9-22□□	93.9(86.3)	95.1(86.3)	250(220)	1.79	1,043
AWP 9-9-28□□	93.9(86.3)	95.1(86.3)	305(275)	1.54	1,203.5
AWP11-6-11□□	113.9(106.3)	65.1(56.3)	140(110)	4.52	652.5
AWP11-6-15□□	113.9(106.3)	65.1(56.3)	180(150)	3.62	751.5
AWP11-6-19□□	113.9(106.3)	65.1(56.3)	220(190)	3.08	850
AWP11-6-24□□	113.9(106.3)	65.1(56.3)	270(240)	2.64	973
AWP12-8-11□□	127.6(120)	80.1(71.3)	135(105)	3.6	778.5
AWP12-8-14□□	127.6(120)	80.1(71.3)	170(140)	2.93	885
AWP12-8-17□□	127.6(120)	80.1(71.3)	209.5(179.5)	2.47	1,004.5
AWP12-8-22□□	127.6(120)	80.1(71.3)	245(215)	2.18	1,112
AWP16-9-14□□	163.9(156.3)	90.1(81.3)	165(135)	2.64	1,094
AWP16-9-18□□	163.9(156.3)	90.1(81.3)	205(175)	2.2	1,240.5
AWP16-9-23□□	163.9(156.3)	90.1(81.3)	255(225)	1.86	1,424
AWP16-9-28□□	163.9(156.3)	90.1(81.3)	305(275)	1.63	1,607.5
AWP21-9-17□□	213.9(206.3)	90.1(81.3)	202(170)	2.3	1,571.5
AWP21-9-21□□	213.9(206.3)	90.1(81.3)	242(210)	1.99	1,742
AWP21-9-26□□	213.9(206.3)	90.1(81.3)	292(260)	1.72	1,955.5
AWP21-9-31□□	213.9(206.3)	90.1(81.3)	342(310)	1.54	2,168.5

■ ( ) value = enclosure dimension.

AWP dimensions

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





# AWA SERIES HEAT-SINK ALUMINIUM ENCLOSURE

AWA series is an aluminium enclosure that has a frame with heat-sink fins on both sides. Furthermore, the enclosure is also conductive, which provides a shielding effect.

By machining the panels, the unit becomes extremely suitable to be used as high-end audio, or as an industrial equipment.

## APPLICATION EXAMPLE

### INDUSTRIAL IoT INTERFACE DEVICE

Product by SEE Système Radio (France)



## INDUSTRIAL FANLESS PC



## AUDIO AMPLIFIER



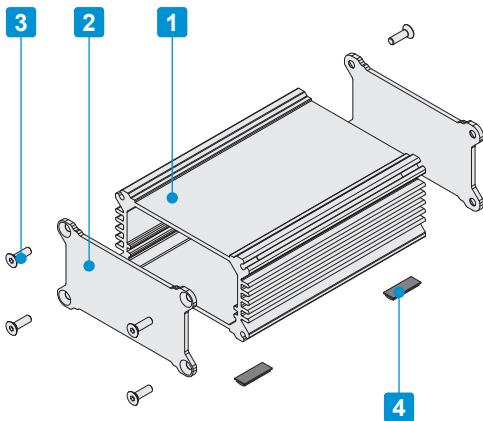
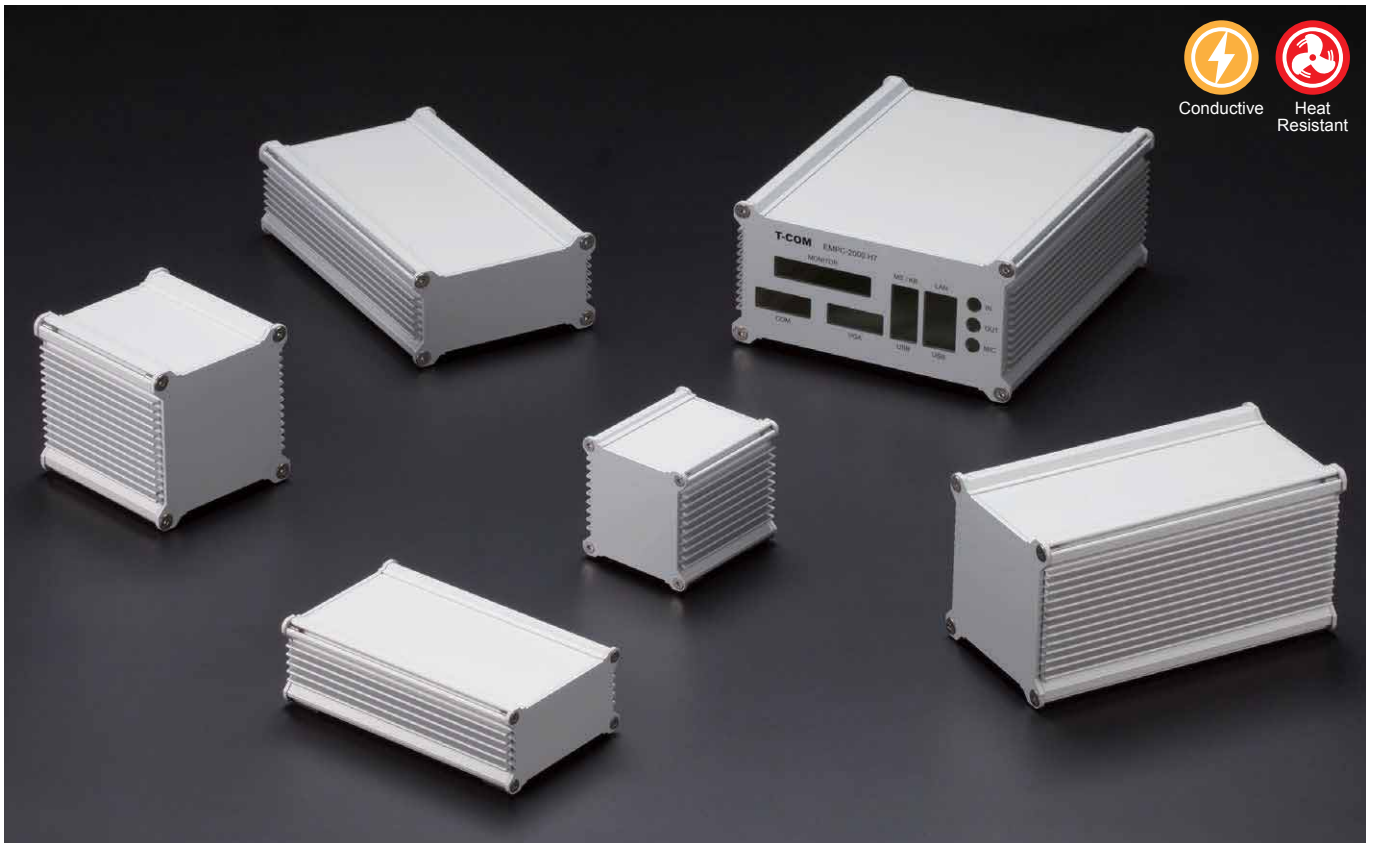
## WIDE-BAND SOLID STATE OPTICAL AMPLIFIER

Product by Spectra Quest Lab. (Japan)

## CUSTOMIZATION

CNC milling available for customization on AWA series.  
See website for more details.





- Extruded aluminium frame manufactured with heat-sink sides.
- Silver anodized end panels makes for a luxurious finish.
- Conductivity is achieved by utilizing the contact between the unfinished end panels side, and the unfinished ends of the frame.
- PCB or chassis can be horizontally mounted by sliding into an inner-grooved body frame.
- Suitable for industrial fanless PC, measuring instrument, digital audio amplifier and so on.

Included screws :  
 AWA5-3, 6-6, 8-4 models : Hex countersunk M3-10 x 8 pcs  
 AWA8-8, 10-5, 12-7, 15-8 models : Hex countersunk M4-10 x 8 pcs  
 AWA20-8 models : Hex countersunk M5-10 x 8 pcs  
 ※Hexagonal wrench included.

**Component**

No.	Part name	Pcs	Material	Color / Finish
1	Body frame	1	Extruded aluminium A6063S-T5	Silver / Anodized
2	End panel	2	Aluminium A1050P	Silver / Anodized (outside) : Unfinished (inside)
3	Hex socket screw	8	Stainless steel	Unfinished
4	Rubber feet	4	Polyurethane	Black

**Accessories (Optional parts)**

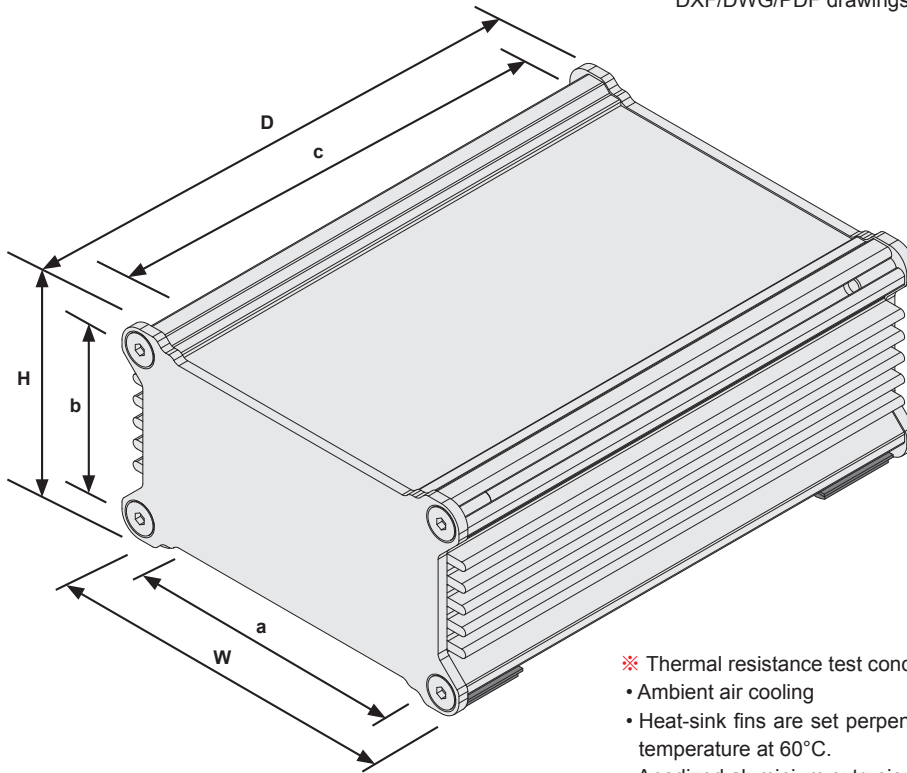


Mounting plate AWC series  
See page 170



Aluminium isolation feet AFS • AFM series  
See page AFS • AFM-1 ~ AFS • AFM-2

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



- ※ Thermal resistance test condition
- Ambient air cooling
  - Heat-sink fins are set perpendicular to the ground with temperature at 60°C.
  - Anodized aluminium extrusion
  - Heat source is applied on the opposite side (inner side) of the fins.

Product no. / Dimensions

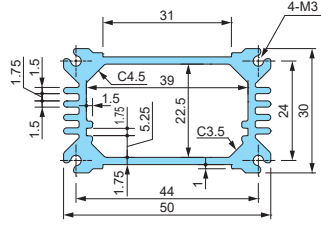
Product no.	Dimensions (External)			Dimensions (Internal)			※ Thermal resistance rate (°C/W)	Weight (g)
	W	H	D	a	b	c		
AWA 5-3- 5SS	52	32	53.2	39	22.5	49.2	11.2	69.5
AWA 5-3- 7SS	52	32	73.2	39	22.5	69.2	9.18	90.5
AWA 5-3-10SS	52	32	98.2	39	22.5	94.2	7.64	116.5
AWA 5-3-12SS	52	32	123.2	39	22.5	119.2	6.63	142.5
AWA 6-6- 7SS	61	61	68	47	51	64	4.41	156
AWA 6-6-10SS	61	61	98	47	51	94	3.5	212
AWA 6-6-14SS	61	61	138	47	51	134	2.83	286
AWA 6-6-19SS	61	61	188	47	51	184	2.33	379
AWA 6-6-24SS	61	61	238	47	51	234	2.02	471.5
AWA 8-4- 8SS	76	41	78	62	31	74	5.97	154
AWA 8-4-10SS	76	41	103	62	31	99	5.01	195
AWA 8-4-13SS	76	41	128	62	31	124	4.37	236.5
AWA 8-4-16SS	76	41	163	62	31	159	3.76	294
AWA 8-8- 9SS	82	82	86	66.5	66.5	81	3.1	319.5
AWA 8-8-11SS	82	82	111	66.5	66.5	106	2.63	392.5
AWA 8-8-16SS	82	82	156	66.5	66.5	151	2.12	523.5
AWA 8-8-21SS	82	82	206	66.5	66.5	201	1.79	669.5
AWA 8-8-26SS	82	82	261	66.5	66.5	256	1.54	829.5
AWA10-5-10SS	102	52	95.6	86.5	36.5	90.6	4.52	288.5
AWA10-5-14SS	102	52	135.6	86.5	36.5	130.6	3.62	387.5
AWA10-5-18SS	102	52	175.6	86.5	36.5	170.6	3.08	486
AWA10-5-23SS	102	52	225.6	86.5	36.5	220.6	2.64	609
AWA12-7- 9SS	115.7	67	90.6	100.2	51.5	85.6	3.6	354
AWA12-7-12SS	115.7	67	125.6	100.2	51.5	120.6	2.93	460
AWA12-7-17SS	115.7	67	165.1	100.2	51.5	160.1	2.47	579.5
AWA12-7-20SS	115.7	67	200.6	100.2	51.5	195.6	2.18	687
AWA15-8-12SS	152	77	120.6	136.5	61.5	115.6	2.64	565.5
AWA15-8-16SS	152	77	160.6	136.5	61.5	155.6	2.2	712
AWA15-8-21SS	152	77	210.6	136.5	61.5	205.6	1.86	895.5
AWA15-8-26SS	152	77	260.6	136.5	61.5	255.6	1.63	1,079
AWA20-8-15SS	202.4	77.4	153.8	186.5	61.5	147.8	2.3	854.5
AWA20-8-19SS	202.4	77.4	193.8	186.5	61.5	187.8	1.99	1,025
AWA20-8-24SS	202.4	77.4	243.8	186.5	61.5	237.8	1.72	1,238
AWA20-8-29SS	202.4	77.4	293.8	186.5	61.5	287.8	1.54	1,451.5



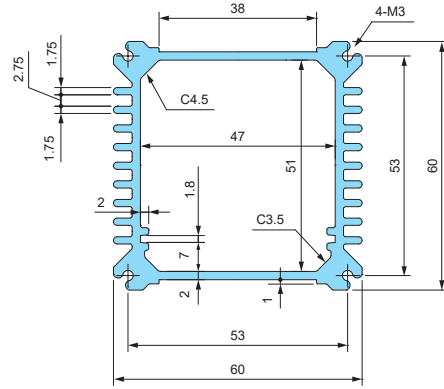
**AW • AWN • AWP • AWA frame**

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

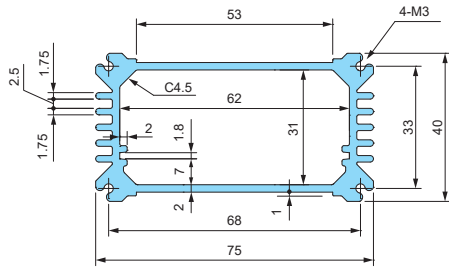
AW/AWN5-4-□  
AWA5-3-□



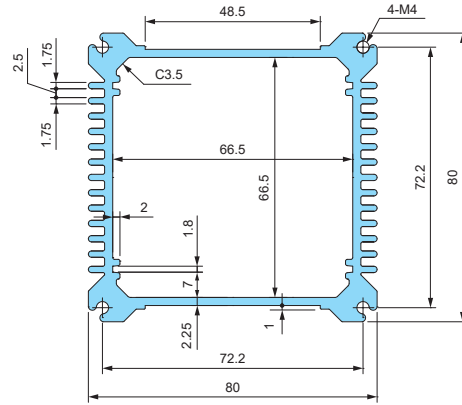
AW/AWN/AWP7-7-□  
AWA6-6-□



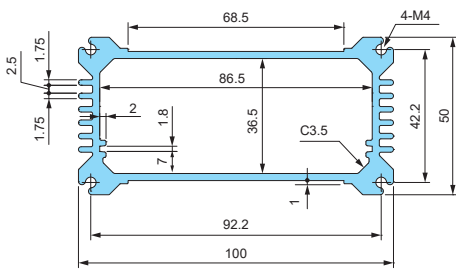
AW/AWN/AWP8-5-□  
AWA8-4-□



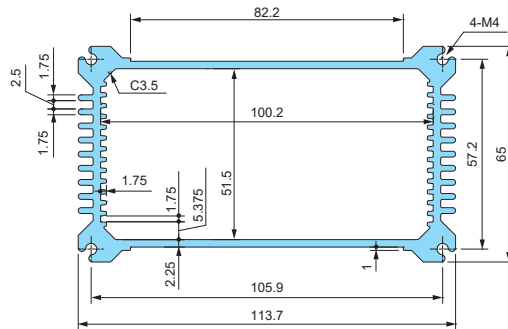
AW/AWN/AWP9-9-□  
AWA8-8-□



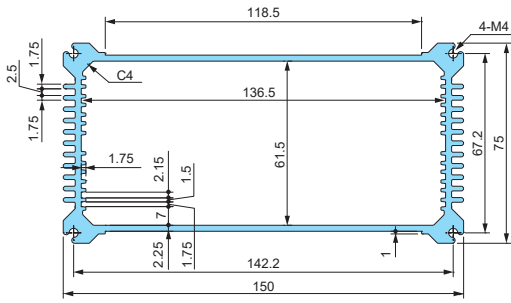
AW/AWN/AWP11-6-□  
AWA10-5-□



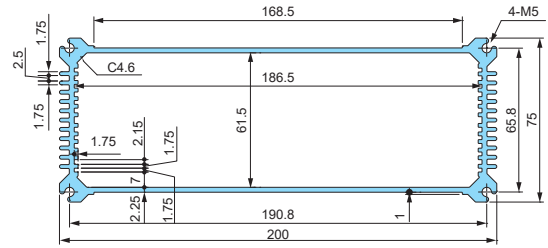
AW/AWN/AWP12-8-□  
AWA12-7-□



AW/AWN/AWP16-9-□  
AWA15-8-□



AW/AWN/AWP21-9-□  
AWA20-8-□

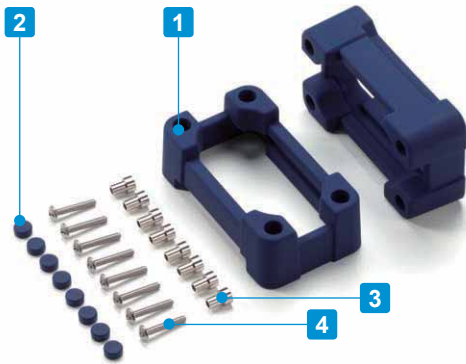


- ※ Thermal resistance test condition
- Ambient air cooling
  - Heat-sink fins are set perpendicular to the ground with temperature at 60°C.
  - Anodized aluminium extrusion
  - Heat source is applied on the opposite side (inner side) of the fins.

Product no.				Frame	※Thermal resistance rate (°C/W)
AW 5-4- 7	AWN 5-4- 7	—	AWA 5-3- 5	49.2	11.2
AW 5-4- 9	AWN 5-4- 9	—	AWA 5-3- 7	69.2	9.18
AW 5-4-11	AWN 5-4-11	—	AWA 5-3-10	94.2	7.64
AW 5-4-14	AWN 5-4-14	—	AWA 5-3-12	119.2	6.63
AW 7-7- 8	AWN 7-7- 8	AWP 7-7- 8	AWA 6-6- 7	64	4.41
AW 7-7-11	AWN 7-7-11	AWP 7-7-11	AWA 6-6-10	94	3.5
AW 7-7-15	AWN 7-7-15	AWP 7-7-15	AWA 6-6-14	134	2.83
AW 7-7-20	AWN 7-7-20	AWP 7-7-20	AWA 6-6-19	184	2.33
AW 7-7-25	AWN 7-7-25	AWP 7-7-25	AWA 6-6-24	234	2.02
AW 8-5- 9	AWN 8-5- 9	AWP 8-5- 9	AWA 8-4- 8	74	5.97
AW 8-5-12	AWN 8-5-12	AWP 8-5-12	AWA 8-4-10	99	5.01
AW 8-5-14	AWN 8-5-14	AWP 8-5-14	AWA 8-4-13	124	4.37
AW 8-5-18	AWN 8-5-18	AWP 8-5-18	AWA 8-4-16	159	3.76
AW 9-9-10	AWN 9-9-10	AWP 9-9-10	AWA 8-8- 9	81	3.1
AW 9-9-13	AWN 9-9-13	AWP 9-9-13	AWA 8-8-11	106	2.63
AW 9-9-17	AWN 9-9-17	AWP 9-9-17	AWA 8-8-16	151	2.12
AW 9-9-22	AWN 9-9-22	AWP 9-9-22	AWA 8-8-21	201	1.79
AW 9-9-28	AWN 9-9-28	AWP 9-9-28	AWA 8-8-26	256	1.54
AW11-6-11	AWN11-6-11	AWP11-6-11	AWA10-5-10	90.6	4.52
AW11-6-15	AWN11-6-15	AWP11-6-15	AWA10-5-14	130.6	3.62
AW11-6-19	AWN11-6-19	AWP11-6-19	AWA10-5-18	170.6	3.08
AW11-6-24	AWN11-6-24	AWP11-6-24	AWA10-5-23	220.6	2.64
AW12-8-11	AWN12-8-11	AWP12-8-11	AWA12-7- 9	85.6	3.6
AW12-8-14	AWN12-8-14	AWP12-8-14	AWA12-7-12	120.6	2.93
AW12-8-17	AWN12-8-17	AWP12-8-17	AWA12-7-17	160.1	2.47
AW12-8-22	AWN12-8-22	AWP12-8-22	AWA12-7-20	195.6	2.18
AW16-9-14	AWN16-9-14	AWP16-9-14	AWA15-5-12	115.6	2.64
AW16-9-18	AWN16-9-18	AWP16-9-18	AWA15-8-16	155.6	2.2
AW16-9-23	AWN16-9-23	AWP16-9-23	AWA15-8-21	205.6	1.86
AW16-9-28	AWN16-9-28	AWP16-9-28	AWA15-8-26	255.6	1.63
AW21-9-17	AWN21-9-17	AWP21-9-17	AWA20-8-15	147.8	2.3
AW21-9-21	AWN21-9-21	AWP21-9-21	AWA20-8-19	187.8	1.99
AW21-9-26	AWN21-9-26	AWP21-9-26	AWA20-8-24	237.8	1.72
AW21-9-31	AWN21-9-31	AWP21-9-31	AWA20-8-29	287.8	1.54

**AWSP SERIES**

**SILICONE PROTECTOR**

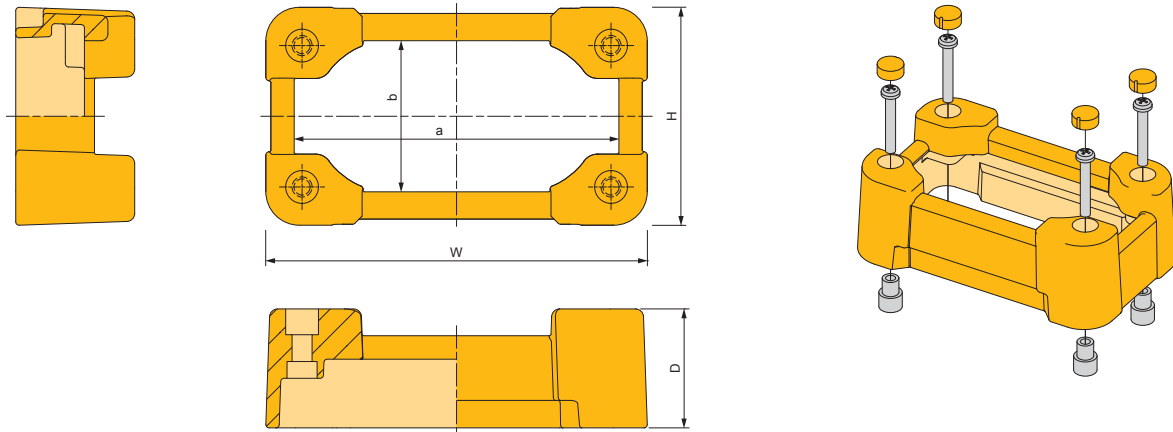


**Color Type**

Code	B Black	G Gray	N Navy	Y Yellow
Color				

- Silicone protector for AWN series.
- Protect switches and/or connectors on end panels from impact when dropped, etc.

**AWSP dimensions**



**Components**

No.	Part name	Pcs	Material	Color / Finish
1	Protector	2	Silicone	Black • Gray • Navy • Yellow
2	Blind cap	8	Silicone	Black • Gray • Navy • Yellow
3	Spacer	8	Brass	Nickel plated
4	Screw	8	Stainless steel	Unfinished

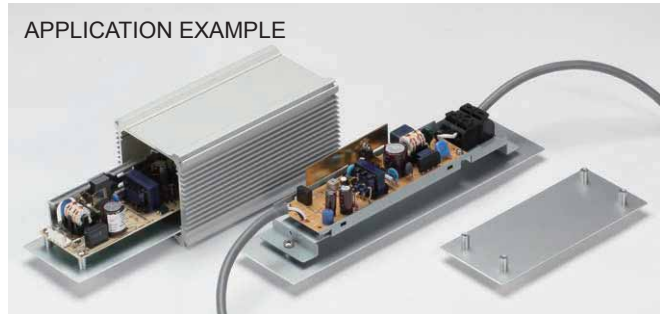
**Product no. / Dimensions**

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

Product no.	W	H	D	a	b	Screw size	Suitable enclosure	Weight (g)
AWSP 7-7□	72.4	73.6	31	58.4	56.6	M3	AWN 7-7-□	99
AWSP 8-5□	87.4	53.6	31	73.4	36.6	M3	AWN 8-5-□	100.5
AWSP 9-9□	93.9	95.1	35.5	76.9	75.1	M4	AWN 9-9-□	184.5
AWSP11-6□	113.9	65.1	35.5	96.9	45.1	M4	AWN11-6-□	186
AWSP12-8□	127.6	80.1	35.5	110.6	60.1	M4	AWN12-8-□	201
AWSP16-9□	163.9	90.1	35.5	145.9	69.1	M4	AWN16-9-□	235
AWSP21-9□	213.9	90.1	39.5	192.9	66.1	M5	AWN21-9-□	333

**AWC SERIES**

**ALUMINIUM MOUNTING PLATE**

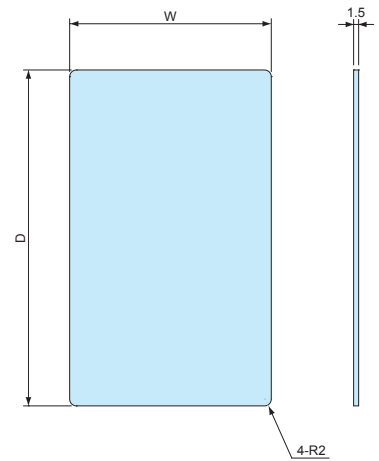


- Material: Aluminium A1050P t=1.5 / Silver anodized
- Mounting plate for AW, AWN, AWP, and AWA series enclosures.
- Utilize for mounting PCB, power supply, terminal blocks, etc.

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

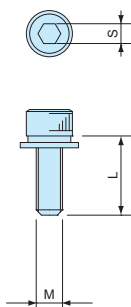
**Product no. / Dimensions**

Product no.	W	D	Suitable enclosure
AWC 5- 7	38.9	49.2	AW • AWN 5-4-7 • AWA 5-3-5
AWC 5- 9	38.9	69.2	AW • AWN 5-4-9 • AWA 5-3-7
AWC 5-11	38.9	94.2	AW • AWN 5-4-11 • AWA 5-3-10
AWC 5-14	38.9	119.2	AW • AWN 5-4-14 • AWA 5-3-12
AWC 7- 8	47	64	AW • AWN • AWP 7-7-8 • AWA 6-6- 7
AWC 7-11	47	94	AW • AWN • AWP 7-7-11 • AWA 6-6-10
AWC 7-15	47	134	AW • AWN • AWP 7-7-15 • AWA 6-6-14
AWC 7-20	47	184	AW • AWN • AWP 7-7-20 • AWA 6-6-19
AWC 7-25	47	234	AW • AWN • AWP 7-7-25 • AWA 6-6-24
AWC 8- 9	61.8	74	AW • AWN • AWP 8-5-9 • AWA 8-4-8
AWC 8-12	61.8	99	AW • AWN • AWP 8-5-12 • AWA 8-4-10
AWC 8-14	61.8	124	AW • AWN • AWP 8-5-14 • AWA 8-4-13
AWC 8-18	61.8	159	AW • AWN • AWP 8-5-18 • AWA 8-4-16
AWC 9-10	66.5	81	AW • AWN • AWP 9-9-10 • AWA 8-8-9
AWC 9-13	66.5	106	AW • AWN • AWP 9-9-13 • AWA 8-8-11
AWC 9-17	66.5	151	AW • AWN • AWP 9-9-17 • AWA 8-8-16
AWC 9-22	66.5	201	AW • AWN • AWP 9-9-22 • AWA 8-8-21
AWC 9-28	66.5	256	AW • AWN • AWP 9-9-28 • AWA 8-8-26
AWC11-11	86.5	90.6	AW • AWN • AWP11-6-11 • AWA10-5-10
AWC11-15	86.5	130.6	AW • AWN • AWP11-6-15 • AWA10-5-14
AWC11-19	86.5	170.6	AW • AWN • AWP11-6-19 • AWA10-5-18
AWC11-24	86.5	220.6	AW • AWN • AWP11-6-24 • AWA10-5-23
AWC12-11	100.2	85.6	AW • AWN • AWP12-8-11 • AWA12-7-9
AWC12-14	100.2	120.6	AW • AWN • AWP12-8-14 • AWA12-7-12
AWC12-17	100.2	160.1	AW • AWN • AWP12-8-17 • AWA12-7-17
AWC12-22	100.2	195.6	AW • AWN • AWP12-8-22 • AWA12-7-20
AWC16-14	136.3	115.6	AW • AWN • AWP16-9-14 • AWA15-8-12
AWC16-18	136.3	155.6	AW • AWN • AWP16-9-18 • AWA15-8-16
AWC16-23	136.3	205.6	AW • AWN • AWP16-9-23 • AWA15-8-21
AWC16-28	136.3	255.6	AW • AWN • AWP16-9-28 • AWA15-8-26
AWC21-17	186.1	147.8	AW • AWN • AWP21-9-17 • AWA20-8-15
AWC21-21	186.1	187.8	AW • AWN • AWP21-9-21 • AWA20-8-19
AWC21-26	186.1	237.8	AW • AWN • AWP21-9-26 • AWA20-8-24
AWC21-31	186.1	287.8	AW • AWN • AWP21-9-31 • AWA20-8-29



**HCS SERIES**

**HEXAGON SOCKET HEAD SCREW**



- Hexagon socket head screws for fastening the end panels of AW and AWN enclosures.
- Utilize for tamper-resistance functionality or for an elegant sleek look.

**Product no. / Dimensions**

Product no.	M	L	S	Material	Pack of
HCS3-12S	3	12	2.5	Stainless steel	8
HCS4-12S	4	12	3	Stainless steel	8
HCS5-12S	5	12	4	Stainless steel	8



# MX • MXA • MXF • MXB SERIES

## ALUMINIUM MOBILE ENCLOSURE

MXF • MXB • MXA • MX mobile enclosures are designed with a beautiful and elegant finish in mind. Having a rounded design, it fits comfortably in your hand, while giving off a simple yet sharp look. Suitable for use as small audio devices and as an amplifier unit, among others in a wide variety of industries. Selectable from 4 different types: an affordable plastic end panel type MX series, a luxurious aluminium end panel type MXA series, a flanged end panel MXF series, and the MXB series, which is the MXA series with a protective silicone band.

## APPLICATION EXAMPLE

### DESKTOP AUDIO PREAMPLIFIER with USB Product by Conisis lab.inc. (Japan)



### DIGITAL HEADPHONE AMPLIFIER

Product by UpTone Audio (USA)

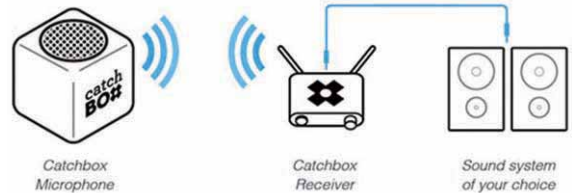


### WIRELESS MICROPHONE SYSTEM

Product by Catchbox (Finland)



**reddot award**  
product design



## ETHERNET CELLULAR ROUTER

Product by NimbeLink (USA)



## WiFi ACCESS POINT



## AIS (AUTOMATIC IDENTIFICATION SYSTEM) SIGNAL RECEIVER

Product by SRT Marine System Solutions (UK)



## DATA TRANSMITTER for AUTOMATIC NUMBER PLATE RECOGNITION (ANPR) SYSTEM

Product by Sensor Dynamics (Australia)



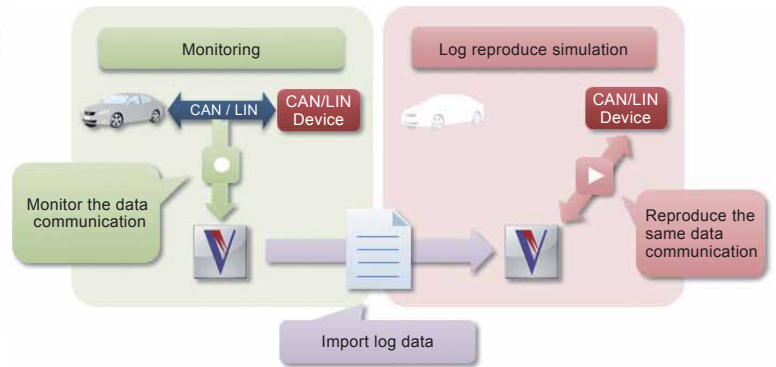
## IO-Link DEVICE

Product by Lemonage Software (Germany)



## CAN & LIN VEHICLE COMMUNICATION SIMULATOR / MONITOR

Product by P&A Technologies (Japan)



## SIGNAL CHECKER / TESTER

Product by KUWATEC (Japan)



## MODEL RAILROAD CONTROLLER

Product by Calura Ltd (Japan)





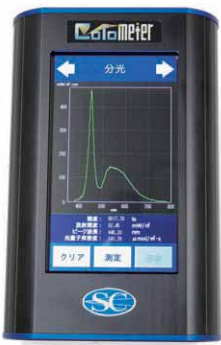
### PORTABLE FREQUENCY STANDARD DEVICE

Product by FREQTIME (Japan)



### SPECTRAL LUMINOMETER

Product by Spectra Co-op (Japan)



### RTD SENSOR TESTER

Product by Turbomation (USA)



### MOBILE MOISTURE METER

Product by ARP (Japan)



### FULL COLOR LED TABLETOP LIGHTING DIVICE

Product by DAISHO DENKI INC. (Japan)



### ACTIVE EMF PROTECTION DEVICE

Product by Blueshield Inc (New Zealand)



### ILLUMINATION INVERTER

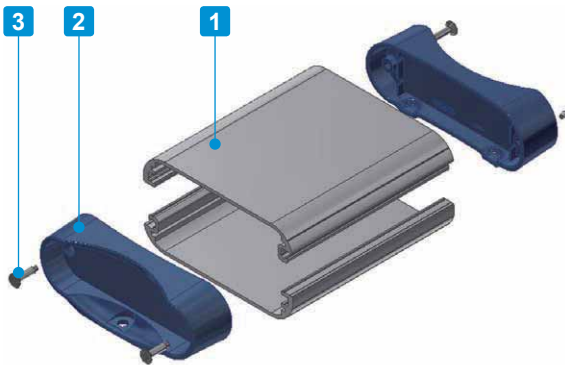
Product by Future Illuminations (USA)





**MXF SERIES**

**FLANGED NETWORK ALUMINIUM ENCLOSURE**

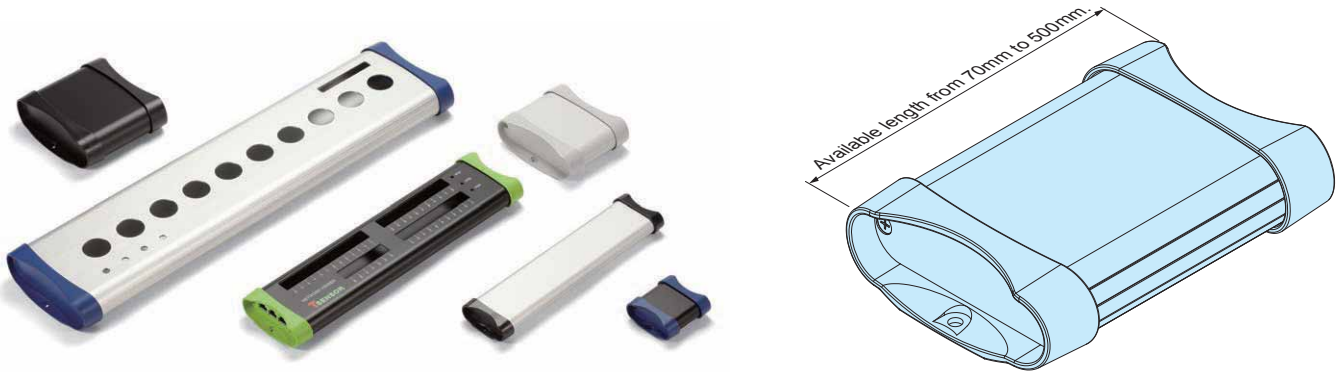


- Flanged network enclosure with easy to hold rounded design.
- 8 different color combinations and 12 different sizes available to choose from.
- Suitable to be used as transmitters, measurement tools, controllers, etc.
- Grooves are built into the internal enclosure, allowing for easy sliding/insertion of pcb boards.

**Components**

No.	Part name	Pcs	Material	Color / Finish
1	Frame	2	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Flanged panel	2	ABS UL94HB	Black • Gray / Unpainted Navy • Lime / Painted
3	Self tapping screw	4	Steel	Nickel plated • Black trivalent chromate

Custom length available in 1mm intervals.



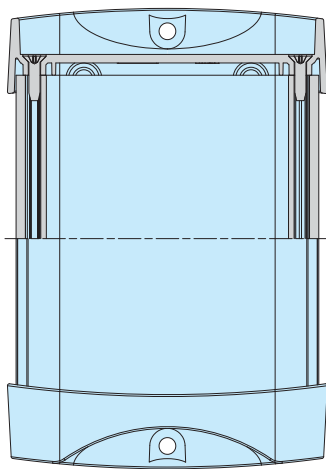
**Color Type** Please choose from the color combinations listed below

※Black and Gray panels are ABS color. Navy and Lime panels are Painted.



**MXF dimensions**

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



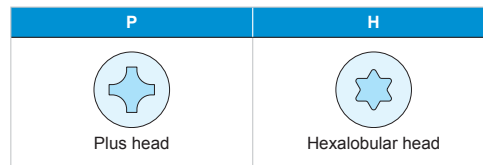
Included screws

MXF2-6 models : M2.6-14 x 4 pcs

MXF2-8, 3-11 models : M3-12 x 4 pcs

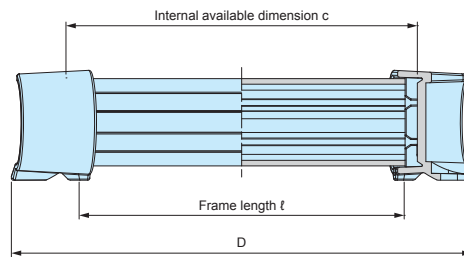
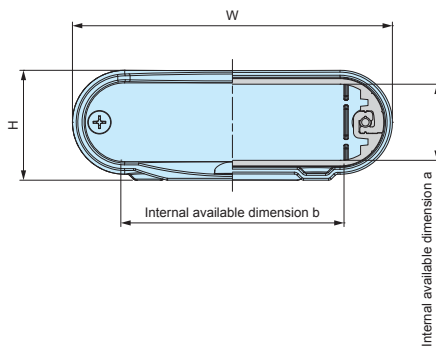
MXF4-13 models : M3-14 x 4 pcs

**Screw Type**



Please request / order by indicating the combination part number as below.

**MXF 2 - 6 - 7**     
Color code Screw P or H



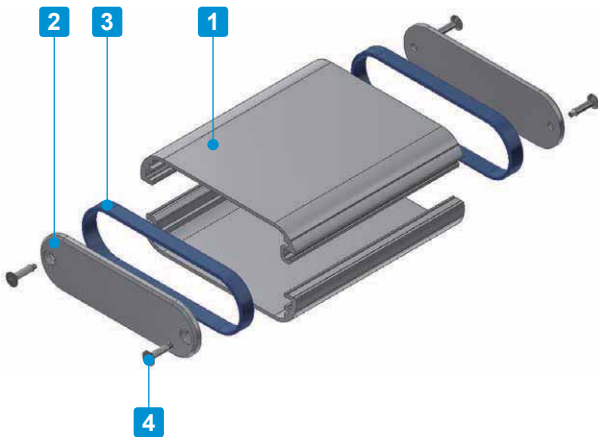
**Product no. / Dimensions**

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

Product no.	H	W	D	a	b	c	ℓ	Weight (g)
<b>NEW</b> MXF2- 6- 7 <span style="border: 1px solid red; display: inline-block; width: 10px; height: 10px;"></span> <span style="border: 1px solid blue; display: inline-block; width: 10px; height: 10px;"></span>	23.4	60.9	65	15.1	41.1	45	40	44
<b>NEW</b> MXF2- 6- 9 <span style="border: 1px solid red; display: inline-block; width: 10px; height: 10px;"></span> <span style="border: 1px solid blue; display: inline-block; width: 10px; height: 10px;"></span>	23.4	60.9	90	15.1	41.1	70	65	59
<b>NEW</b> MXF2- 6-12 <span style="border: 1px solid red; display: inline-block; width: 10px; height: 10px;"></span> <span style="border: 1px solid blue; display: inline-block; width: 10px; height: 10px;"></span>	23.4	60.9	115	15.1	41.1	95	90	75
<b>NEW</b> MXF2- 8- 9 <span style="border: 1px solid red; display: inline-block; width: 10px; height: 10px;"></span> <span style="border: 1px solid blue; display: inline-block; width: 10px; height: 10px;"></span>	29.6	86.1	94	20.5	60.1	64.6	58	90
<b>NEW</b> MXF2- 8-12 <span style="border: 1px solid red; display: inline-block; width: 10px; height: 10px;"></span> <span style="border: 1px solid blue; display: inline-block; width: 10px; height: 10px;"></span>	29.6	86.1	124	20.5	60.1	94.6	88	121
<b>NEW</b> MXF2- 8-15 <span style="border: 1px solid red; display: inline-block; width: 10px; height: 10px;"></span> <span style="border: 1px solid blue; display: inline-block; width: 10px; height: 10px;"></span>	29.6	86.1	154	20.5	60.1	124.6	118	153
<b>NEW</b> MXF3-11-10 <span style="border: 1px solid red; display: inline-block; width: 10px; height: 10px;"></span> <span style="border: 1px solid blue; display: inline-block; width: 10px; height: 10px;"></span>	35.6	114.2	104	26.5	87.3	74.6	66	130
<b>NEW</b> MXF3-11-14 <span style="border: 1px solid red; display: inline-block; width: 10px; height: 10px;"></span> <span style="border: 1px solid blue; display: inline-block; width: 10px; height: 10px;"></span>	35.6	114.2	144	26.5	87.3	114.6	106	184
<b>NEW</b> MXF3-11-19 <span style="border: 1px solid red; display: inline-block; width: 10px; height: 10px;"></span> <span style="border: 1px solid blue; display: inline-block; width: 10px; height: 10px;"></span>	35.6	114.2	194	26.5	87.3	164.6	156	251
<b>NEW</b> MXF4-13-12 <span style="border: 1px solid red; display: inline-block; width: 10px; height: 10px;"></span> <span style="border: 1px solid blue; display: inline-block; width: 10px; height: 10px;"></span>	40.6	134.2	124	31	104.1	94.4	84	197
<b>NEW</b> MXF4-13-17 <span style="border: 1px solid red; display: inline-block; width: 10px; height: 10px;"></span> <span style="border: 1px solid blue; display: inline-block; width: 10px; height: 10px;"></span>	40.6	134.2	174	31	104.1	144.4	134	284
<b>NEW</b> MXF4-13-23 <span style="border: 1px solid red; display: inline-block; width: 10px; height: 10px;"></span> <span style="border: 1px solid blue; display: inline-block; width: 10px; height: 10px;"></span>	40.6	134.2	234	31	104.1	204.4	194	388

# MXB SERIES

# ALUMINIUM MOBILE ENCLOSURE with SILICONE BAND



- All aluminium mobile enclosure with anti-slip, impact resistant silicone band.
- 16 different color combinations and 30 different sizes available to choose from.
- Suitable to be used as digital audio amplifiers, communication devices, measurement tools, etc.

### Components

No.	Part name	Pcs	Material	Color / Finish
1	Frame	2	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Panel	2	Aluminium A1050P	Silver • Black / Anodized
3	Silicone band	2	Silicone	Black • Light gray • Navy • Cyan • Green • Yellow • Orange • Red
4	Self tapping screw	4	Steel	Nickel plated • Black trivalent chromate

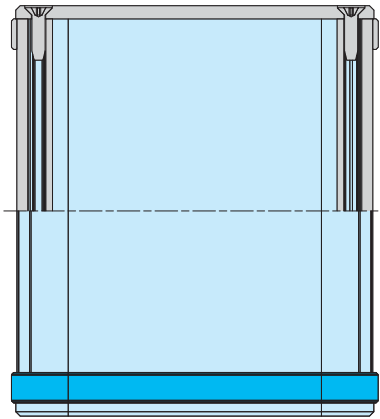
### Color Type



■ Mix and match the MXA series with the SIB series silicone band for a wider variety of color combinations.

MXB dimensions

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





Included screws

MXB1-5, 2-4, 2-6, 2-10 models : M2.6-14 x 4 pcs

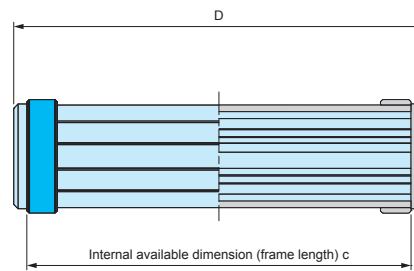
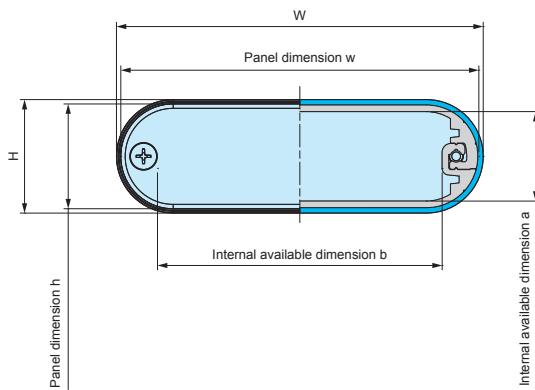
MXB2-7, 2-8, 3-11, 4-7, 4-10, 4-13 models : M3-10 x 4 pcs

Screw Type

P	H
	
Plus head	Hexalobular head

Please request / order by indicating the combination part number as below.

**MXB 1 - 5 - 5** □ □ □  
Color code Screw P or H



Product no. / Dimensions

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

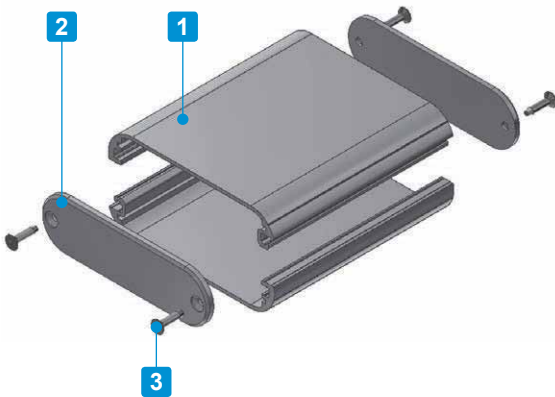
Product no.	H	W	D	h	w	a	b	c	Weight (g)
NEW MXB1- 5- 5 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	15.8	50.4	49	13	48	10.2	33.6	43	26
NEW MXB1- 5- 8 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	15.8	50.4	79	13	48	10.2	33.6	73	41
NEW MXB1- 5-11 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	15.8	50.4	109	13	48	10.2	33.6	103	56
NEW MXB2- 4- 4 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	18	43.6	44	15	41	12.2	26.6	38	26
NEW MXB2- 4- 7 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	18	43.6	74	15	41	12.2	26.6	68	41
NEW MXB2- 4-10 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	18	43.6	104	15	41	12.2	26.6	98	51
NEW MXB2- 6- 5 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	20.3	59.6	46	18	57	15.1	42.5	40	36
NEW MXB2- 6- 7 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	20.3	59.6	71	18	57	15.1	42.5	65	51
NEW MXB2- 6-10 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	20.3	59.6	96	18	57	15.1	42.5	90	66
NEW MXB2- 7- 5 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	23.5	72.5	54	20	70	16.5	53.2	48	57
NEW MXB2- 7- 8 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	23.5	72.5	84	20	70	16.5	53.2	78	82
NEW MXB2- 7-11 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	23.5	72.5	114	20	70	16.5	53.2	108	112
NEW MXB2- 8- 6 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	26.5	84.8	64	24	82	20.5	65.2	58	77
NEW MXB2- 8- 9 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	26.5	84.8	94	24	82	20.5	65.2	88	107
NEW MXB2- 8-12 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	26.5	84.8	124	24	82	20.5	65.2	118	137
NEW MXB2-10- 7 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	20.3	103.6	74	16	100	13.2	85.6	68	75
NEW MXB2-10-10 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	20.3	103.6	104	16	100	13.2	85.6	98	105
NEW MXB2-10-14 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	20.3	103.6	144	16	100	13.2	85.6	138	140
NEW MXB3-11- 7 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	33.5	113.9	72	30	110	26.5	93.2	66	120
NEW MXB3-11-11 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	33.5	113.9	112	30	110	26.5	93.2	106	170
NEW MXB3-11-16 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	33.5	113.9	162	30	110	26.5	93.2	156	240
NEW MXB4- 7- 5 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	38.2	72	52	35	70	31.4	53.2	46	72
NEW MXB4- 7- 8 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	38.2	72	82	35	70	31.4	53.2	76	102
NEW MXB4- 7-11 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	38.2	72	112	35	70	31.4	53.2	106	137
NEW MXB4-10- 7 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	44.7	97.9	70	40	95	36.4	78.2	64	125
NEW MXB4-10-11 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	44.7	97.9	110	40	95	36.4	78.2	104	180
NEW MXB4-10-14 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	44.7	97.9	140	40	95	36.4	78.2	134	225
NEW MXB4-13- 9 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	38.5	134	90	35	130	31	113.2	84	187
NEW MXB4-13-14 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	38.5	134	140	35	130	31	113.2	134	272
NEW MXB4-13-20 <span style="color: red;">□</span> <span style="color: red;">□</span> <span style="color: blue;">□</span>	38.5	134	200	35	130	31	113.2	194	377

■ H and W may experience slight variance from listed dimensions due to silicone band construct.



# MXA SERIES

# ALUMINIUM MOBILE ENCLOSURE



- All aluminium mobile enclosure with easy to hold rounded design.
- 14 different color combinations and 30 different sizes available to choose from.
- Suitable to be used as digital audio amplifiers, communication devices, measurement tools, etc.
- Grooves are built into the internal enclosure, allowing for easy sliding/insertion of pcb boards.
- MXA1-5 models do not have internal grooves.

Included screws  
 MXA1-5, 2-4, 2-6, 2-10 models : M2.6-14 x 4pcs  
 MXA2-7, 2-8, 3-11, 4-7, 4-10, 4-13 models : M3-10 x 4 pcs

### Components

No.	Part name	Pcs	Material	Color / Finish
1	Frame	2	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Panel	2	Aluminium A1050P	Black • Silver • Cobalt • Green • Purple • Orange • Red / Anodized
3	Self tapping screw	4	Steel	Nickel plated • Black trivalent chromate

Custom length available in 1mm intervals.

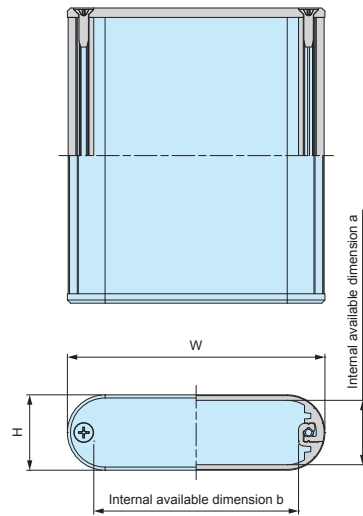


**Color Type** Please choose from the color combinations listed below

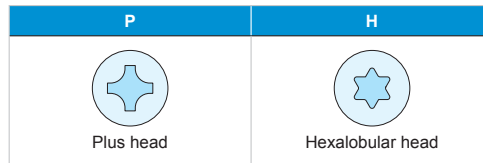


**MXA dimensions**

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



**Screw Type**



Please request / order by indicating the combination part number as below.

**MXA 1 - 5 - 5** □ □ □  
Color code Screw P or H

**Accessories (Optional parts)**



Silicone band SIB series  
See page 130

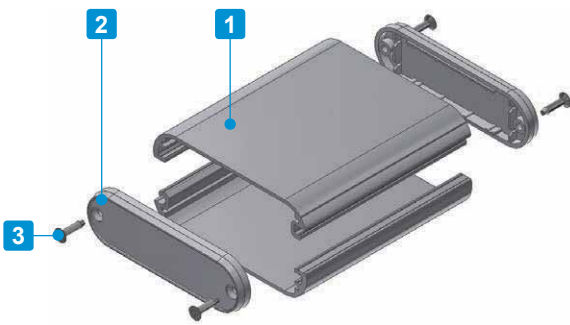
**Product no. / Dimensions**

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

Product no.	H	W	D	a	b	c	Weight (g)
MXA1- 5- 5□□	13	48	49	10.2	33.6	43	25
MXA1- 5- 8□□	13	48	79	10.2	33.6	73	40
MXA1- 5-11□□	13	48	109	10.2	33.6	103	55
MXA2- 4- 4□□	15	41	44	12.2	26.6	38	25
MXA2- 4- 7□□	15	41	74	12.2	26.6	68	40
MXA2- 4-10□□	15	41	104	12.2	26.6	98	50
MXA2- 6- 5□□	18	57	46	15.1	42.5	40	35
MXA2- 6- 7□□	18	57	71	15.1	42.5	65	50
MXA2- 6-10□□	18	57	96	15.1	42.5	90	65
MXA2- 7- 5□□	20	70	54	16.5	53.2	48	55
MXA2- 7- 8□□	20	70	84	16.5	53.2	78	80
MXA2- 7-11□□	20	70	114	16.5	53.2	108	110
MXA2- 8- 6□□	24	82	64	20.5	65.2	58	75
MXA2- 8- 9□□	24	82	94	20.5	65.2	88	105
MXA2- 8-12□□	24	82	124	20.5	65.2	118	135
MXA2-10- 7□□	16	100	74	13.2	85.6	68	70
MXA2-10-10□□	16	100	104	13.2	85.6	98	100
MXA2-10-14□□	16	100	144	13.2	85.6	138	135
MXA3-11- 7□□	30	110	72	26.5	93.2	66	115
MXA3-11-11□□	30	110	112	26.5	93.2	106	165
MXA3-11-16□□	30	110	162	26.5	93.2	156	235
MXA4- 7- 5□□	35	70	52	31.4	53.2	46	70
MXA4- 7- 8□□	35	70	82	31.4	53.2	76	100
MXA4- 7-11□□	35	70	112	31.4	53.2	106	135
MXA4-10- 7□□	40	95	70	36.4	78.2	64	120
MXA4-10-11□□	40	95	110	36.4	78.2	104	175
MXA4-10-14□□	40	95	140	36.4	78.2	134	220
MXA4-13- 9□□	35	130	90	31	113.2	84	180
MXA4-13-14□□	35	130	140	31	113.2	134	265
MXA4-13-20□□	35	130	200	31	113.2	194	370

# MX SERIES

# MOBILE ENCLOSURE



- Mobile enclosure with easy to hold rounded design.
- 12 different color combinations and 30 different sizes available to choose from.
- Frame is made from extruded aluminium material, while the panel is ABS plastic.
- Grooves are built into the internal enclosure, allowing for easy sliding/insertion of pcb boards.
- MX1-5 models do not have internal grooves.

Included screws

MX1-5, 2-4, 2-6, 2-10 models : M2.6-14 x 4 pcs

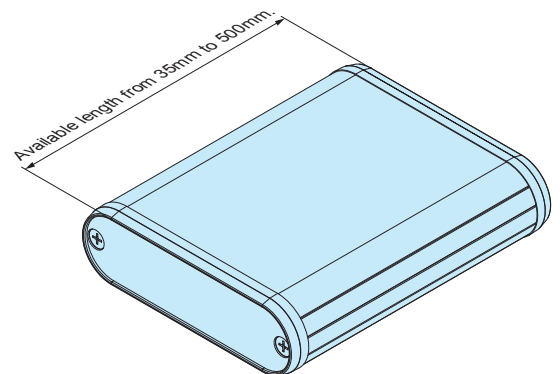
MX2-7, 2-8, 3-11 models : M3-12 x 4 pcs

MX4-7, 4-10, 4-13 models : M3-14 x 4 pcs

### Components

No.	Part name	Pcs	Material	Color / Finish
1	Frame	2	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Panel	2	ABS UL94HB	Gray • Black / Unpainted Navy • Lime • Orange • Red / Painted
3	Self tapping screw	4	Steel	Nickel plated • Black trivalent chromate

Custom length available in 1mm intervals.



**Color Type** Please choose from the color combinations listed below

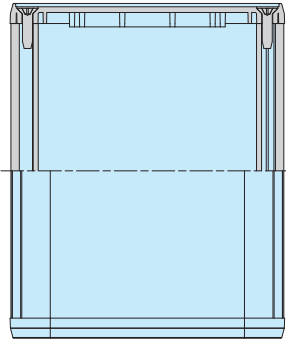
※Black • Gray panels / Unpainted Other panels / Painted



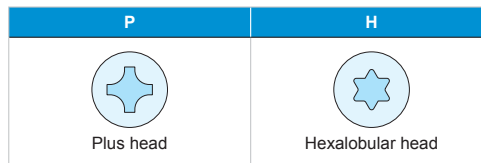
**MX dimensions**

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

**Accessories (Optional parts)**



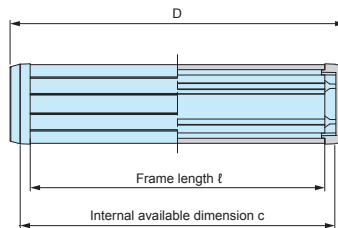
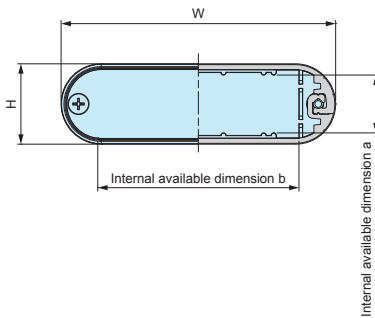
**Screw Type**



Silicone band SIB series  
See page 130

Please request / order by indicating the combination part number as below.

**MX 1 - 5 - 6**     
Color code      Screw P or H



**Product no. / Dimensions**

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

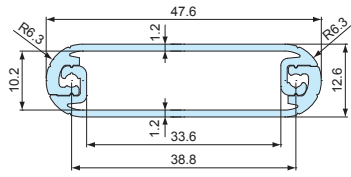
Product no.	H	W	D	a	b	c	ℓ	Weight (g)
MX1- 5- 6	13	48	55	6.9	33.6	49.6	43	25
MX1- 5- 9	13	48	85	6.9	33.6	79.6	73	40
MX1- 5-12	13	48	115	6.9	33.6	109.6	103	55
MX2- 4- 5	15	41	50	8.9	26.6	44.6	38	20
MX2- 4- 8	15	41	80	8.9	26.6	74.6	68	35
MX2- 4-11	15	41	110	8.9	26.6	104.6	98	50
MX2- 6- 5	18	57	50	12.3	42.5	45	40	35
MX2- 6- 8	18	57	75	12.3	42.5	70	65	50
MX2- 6-10	18	57	100	12.3	42.5	95	90	70
MX2- 7- 6	20	70	60	13.2	53.2	54.6	48	50
MX2- 7- 9	20	70	90	13.2	53.2	84.6	78	80
MX2- 7-12	20	70	120	13.2	53.2	114.6	108	105
MX2- 8- 7	24	82	70	17.2	65.2	64.6	58	75
MX2- 8-10	24	82	100	17.2	65.2	94.6	88	105
MX2- 8-13	24	82	130	17.2	65.2	124.6	118	140
MX2-10- 8	16	100	80	9.9	85.6	74.6	68	70
MX2-10-11	16	100	110	9.9	85.6	104.6	98	95
MX2-10-15	16	100	150	9.9	85.6	144.6	138	130
MX3-11- 8	30	110	80	23.3	93.2	74.6	66	110
MX3-11-12	30	110	120	23.3	93.2	114.6	106	165
MX3-11-17	30	110	170	23.3	93.2	164.6	156	235
MX4- 7- 6	35	70	60	28.2	53.2	53	46	65
MX4- 7- 9	35	70	90	28.2	53.2	83	76	100
MX4- 7-12	35	70	120	28.2	53.2	113	106	130
MX4-10- 8	40	95	80	33.1	78.2	73	64	115
MX4-10-12	40	95	120	33.1	78.2	113	104	175
MX4-10-15	40	95	150	33.1	78.2	143	134	215
MX4-13-10	35	130	100	27.7	113.2	94.4	84	175
MX4-13-15	35	130	150	27.7	113.2	144.4	134	265
MX4-13-21	35	130	210	27.7	113.2	204.4	194	375



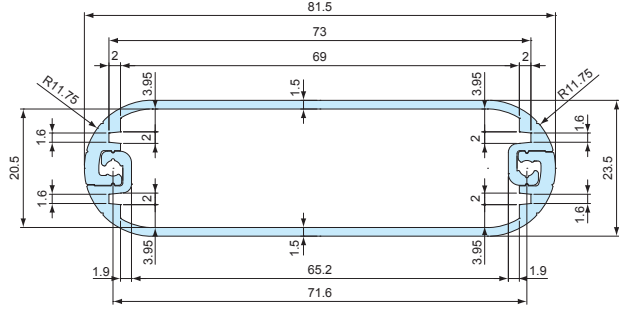
MXF • MXB • MXA • MX frame

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

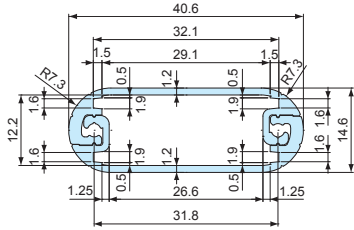
MXF/MXB/MXA/MX1-5-□



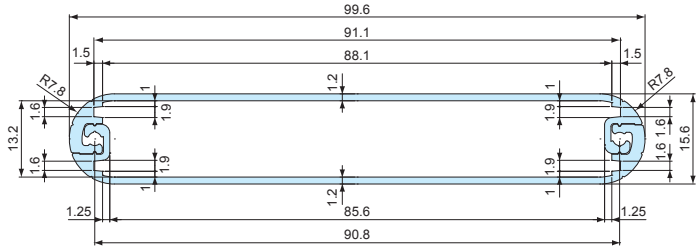
MXF/MXB/MXA/MX2-8-□



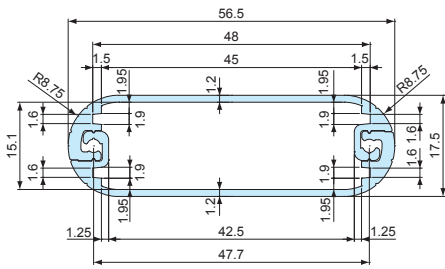
MXF/MXB/MXA/MX2-4-□



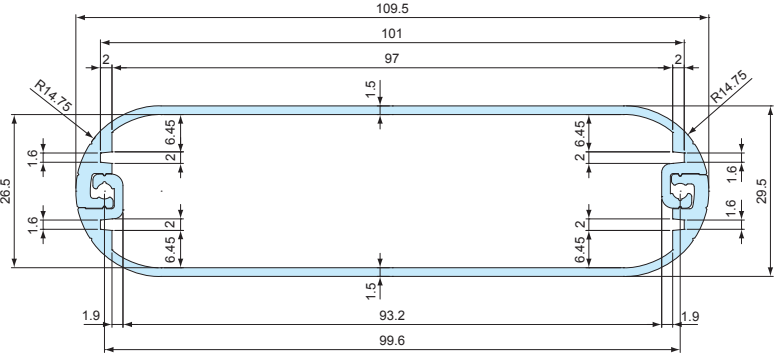
MXF/MXB/MXA/MX2-10-□



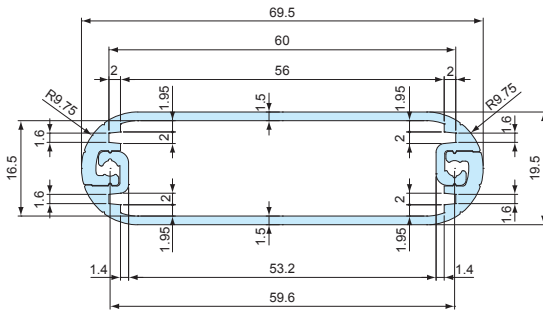
MXF/MXB/MXA/MX2-6-□



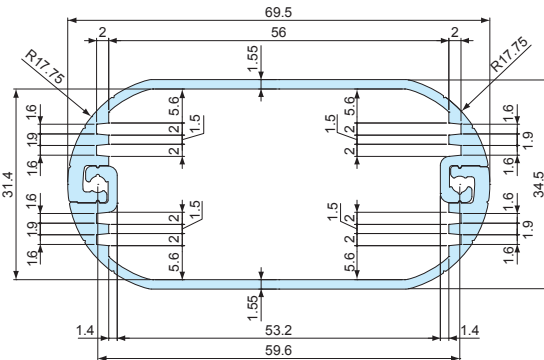
MXF/MXB/MXA/MX3-11-□



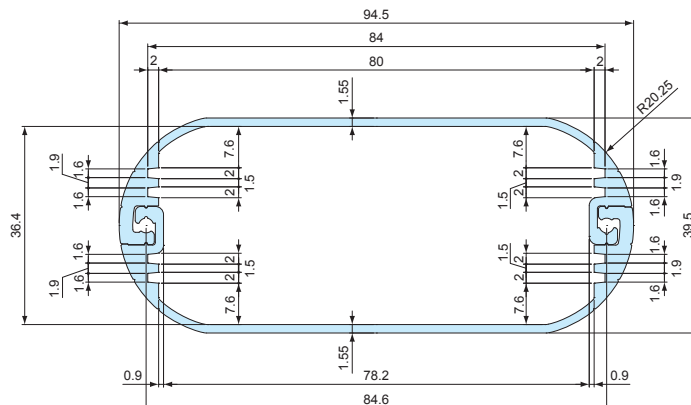
MXF/MXB/MXA/MX2-7-□



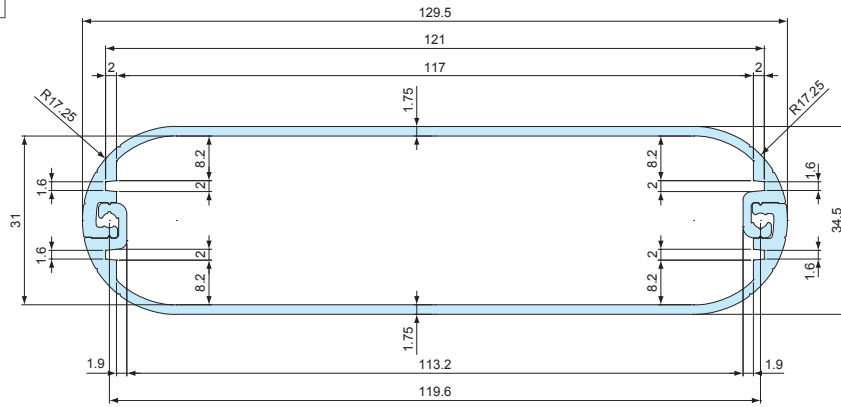
MXF/MXB/MXA/MX4-7-□



MXF/MXB/MXA/MX4-10-□



MXF/MXB/MXA/MX4-13-□



Accessories (Optional parts)

**SIB SERIES** **SILICONE BAND** ★★ NEW

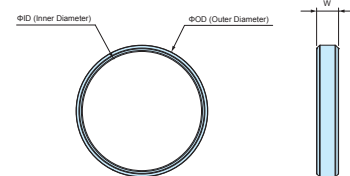


Application example



- Silicone band designed to fit MXA & MX series.
- Silicone band provides both shock resistance and non-slip grips for the MXA & MX enclosure.
- Elastic silicone band may also fit other similarly sized enclosures.

SIB dimensions



Color Type

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

Components

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

Product no. / Dimensions

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

Product no.	W	ID	OD	Suitable enclosures	Enclosure circumference (mm)	Weight (g)
NEW SIB-21□	6	21	25	MXA/MX1-5-□ • 2-4-□ • 2-6-□	95~135	2
NEW SIB-38□	7	38	42	MXA/MX2-7-□ • 2-8-□ • 4-7-□	160~190	4
NEW SIB-58□	8	58	63	MXA/MX2-10-□ • 3-11-□ • 4-10-□	215~255	10
NEW SIB-72□	10	72	77	MXA/MX4-13-□	280~320	14

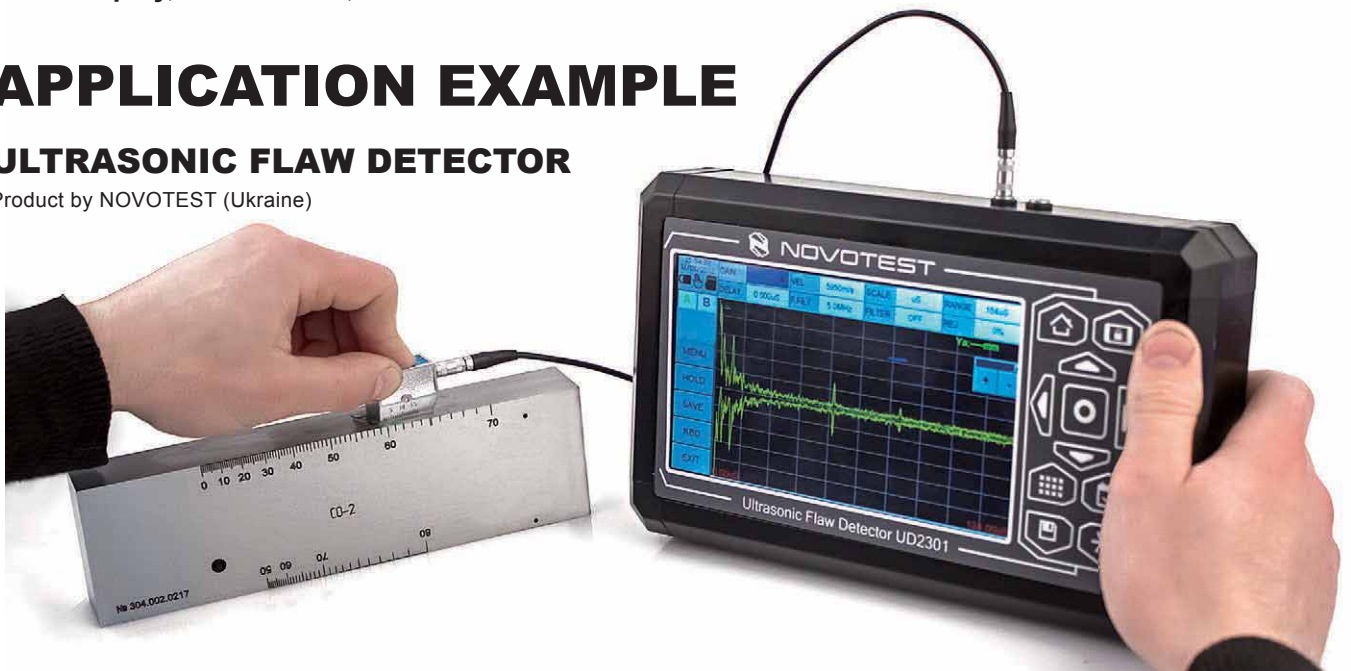
# FC SERIES ALUMINIUM CONTROL BOX

FC and FCW series are applicable for various purposes such as control and switch box, touch panel display, monitor box, and so on.

## APPLICATION EXAMPLE

### ULTRASONIC FLAW DETECTOR

Product by NOVOTEST (Ukraine)



### COIL WINDING MACHINE Product by TNK (Japan)



### 4-AXIS ROBOT CONTROLLER Product by KDS (Japan)

Product by KDS (Japan)



### STREAMING VIDEO PROVIDER



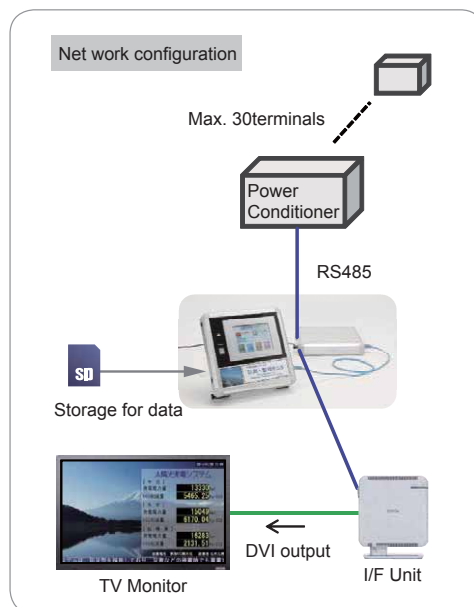
Product by StreamingVideoProvider (UK)

### HAND-CARRY CONTROL BOX



Product by Coms (Japan)

## SOLAR MONITORING SYSTEM



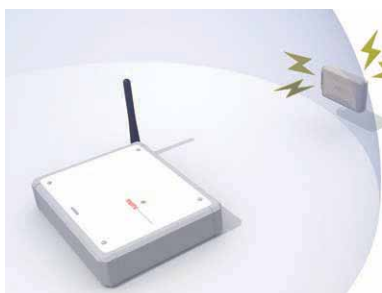
## 4 CHANNEL EDGE NODE

Product by SHINWA (Japan)



## ACTIVE RFID TAG READER • TRIGGER

Product by Matrix (Japan)



## COMPACT SOLAR POWER SUPPLY

Product by Elenagic (Japan)



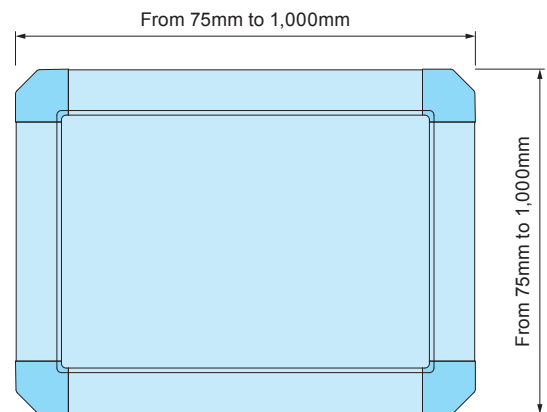




Technical Data
Protection class: IP40

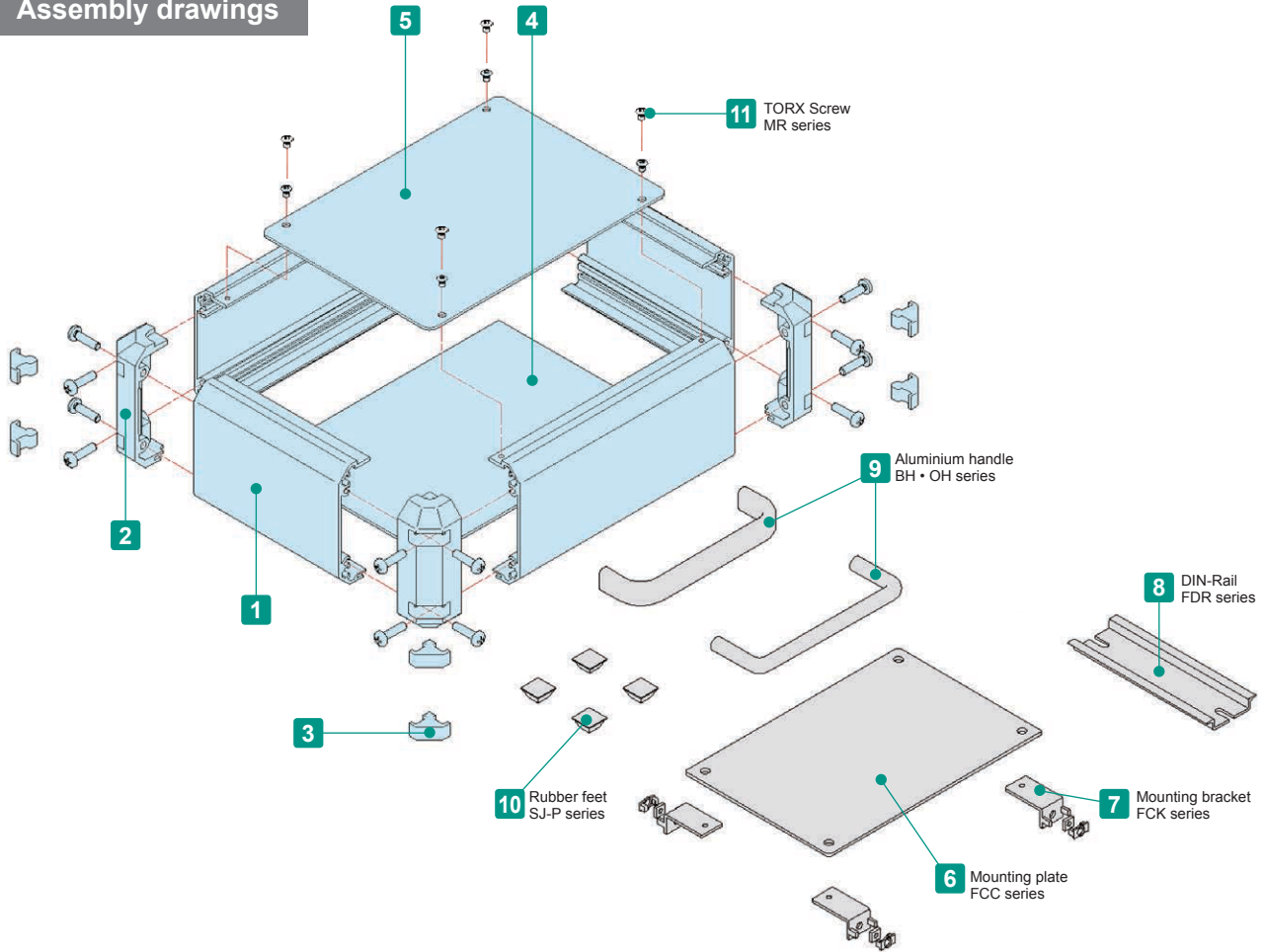
- 175 different sizes in 4 different color variations available.
- Simple designed aluminium utility box composed of extruded aluminium frames, aluminium panels and ABS corner joints.
- Suitable for touch panel display, industrial control equipment, and various other devices.

**Custom width / length available in 1mm intervals**



- Flexible frame width / length from 75mm to 1,000mm in 1mm intervals.
- No minimum order quantity and short lead time for small quantity order.

Assembly drawings



Included screws  
 M4-15 Trivalent chromate  
 (M3-15 for FC4 models)  
 M3-5 Slotted raised countersunk / Silver = Nickel plated, Black = Trivalent chromate

Components

No.	Part name	Pcs	Material	Color / Finish
1	Frame	4	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Corner block	4	ABS UL94HB	Light gray • Black
3	Blind plug	8	TPE	Light gray • Black
4	Slide panel	1	Aluminium A1050P t=1.5	Silver / Hairline brushed & Anodized
			Aluminium A1100P t=1.5	Black / painted
5	Screwed panel	1	Aluminium A1050P t=1.5	Silver / Hairline brushed & Anodized
			Aluminium A1100P t=1.5	Black / painted

Accessories (Optional parts)



**6** Mounting plate FCC series  
 See page FCC • FCK-1 ~  
 FCC • FCK-2

**7** Mounting bracket FCK series  
 See page FCC • FCK-2

**8** DIN-Rail FDR series  
 See MR • FDR-1

**9** Aluminium handle BH • OH series  
 See page BH • Z-P-1 &  
 OH • KH-1

**10** Rubber feet SJ-P series  
 See page Feet-2



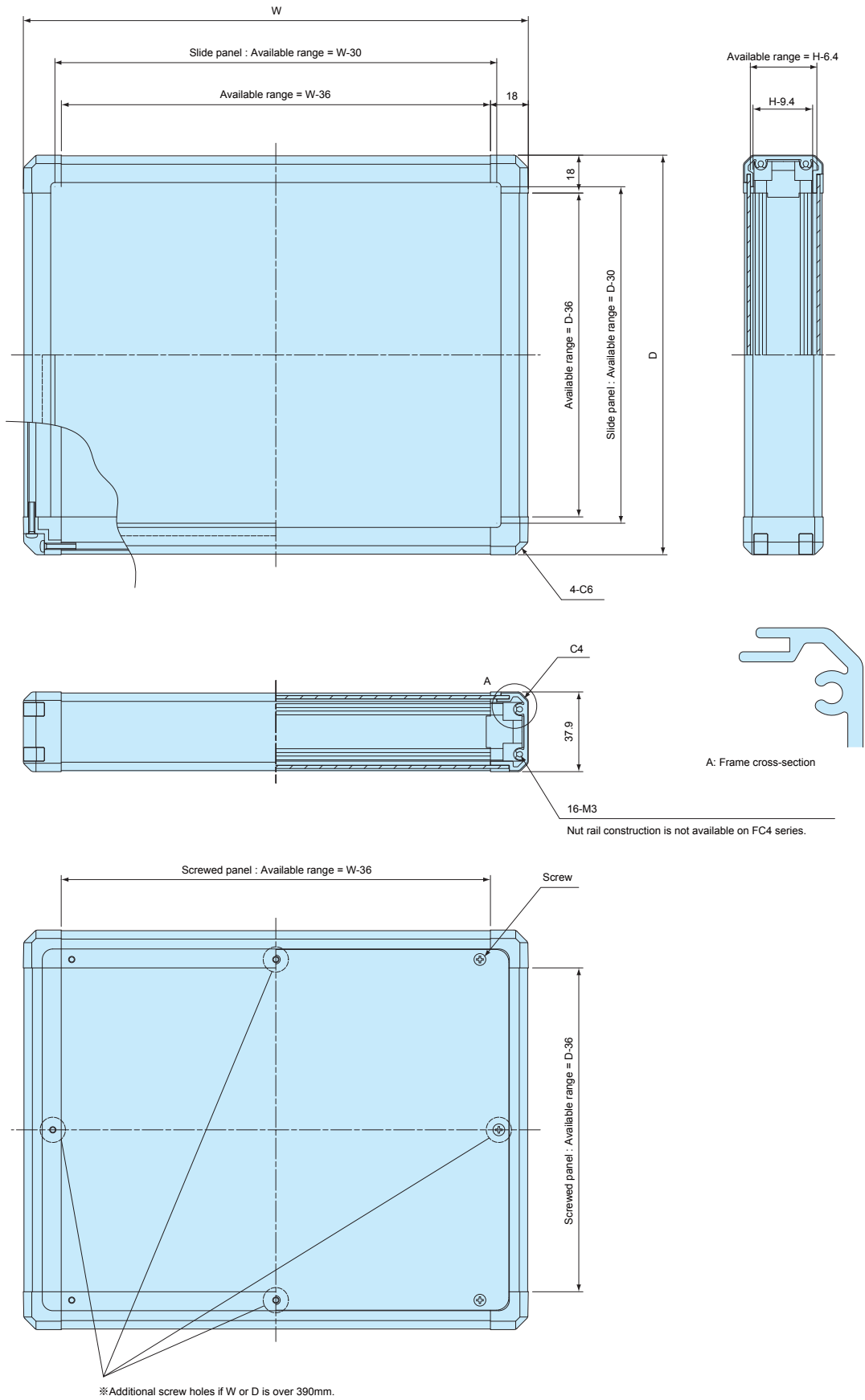
**11** TORX screw MR3-5Z  
 See MR • FDR-1

FC dimensions

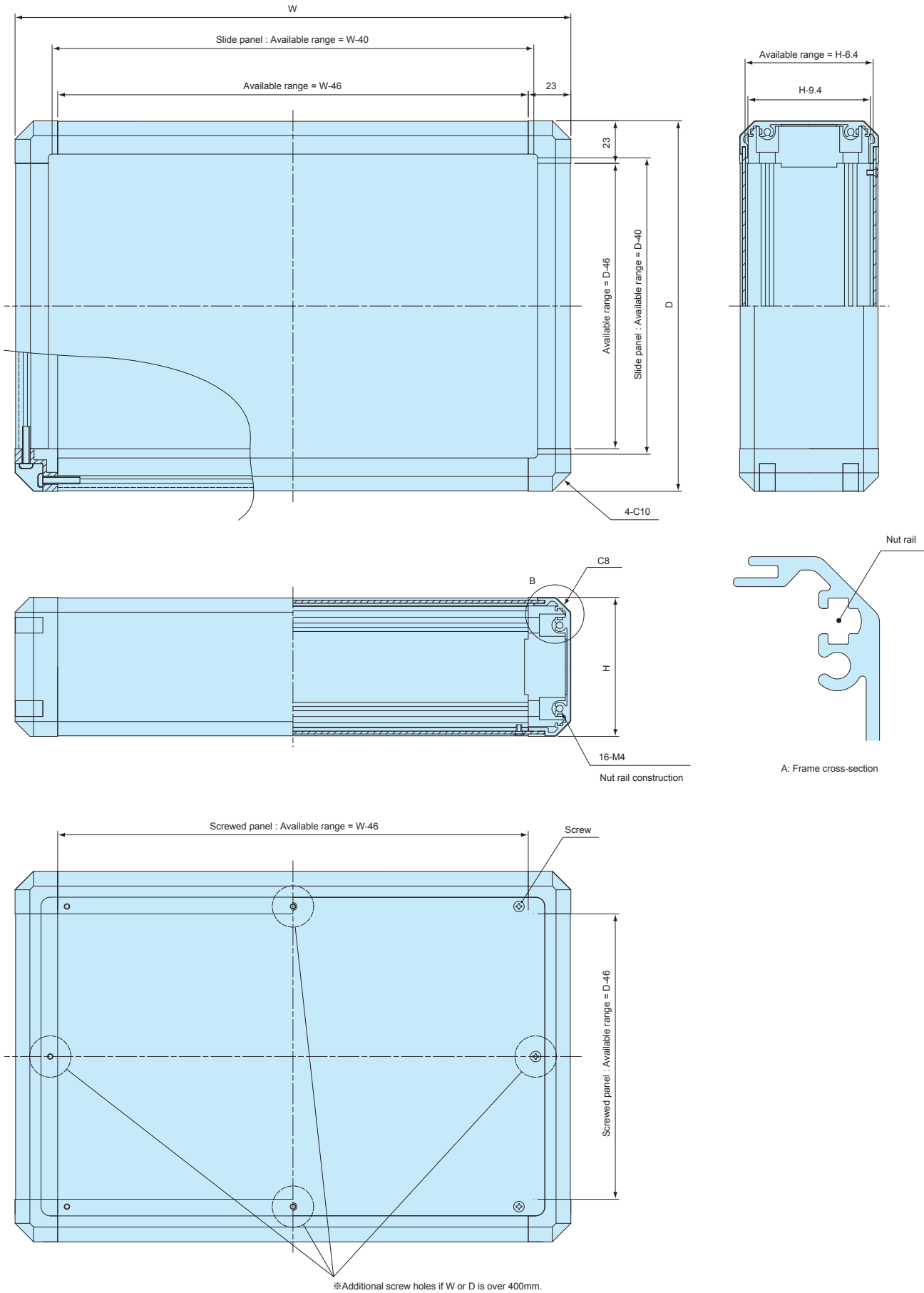
■ Drawings below are reference examples only.  
DXF/DWG/PDF drawings available on our website.

FC4 models

■ Refer to page 211 ~ 212 for enclosure dimensions.




FC5 • FC6 • FC8 • FC10 • FC13 • FC15 models





**Color Type**

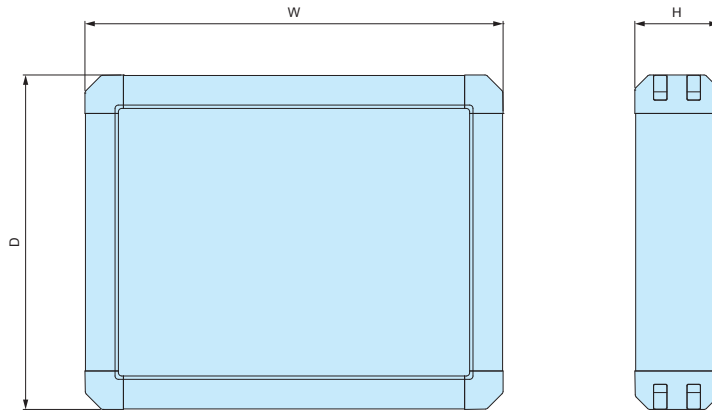
GS		BS		BX		BB	
							
Panel	Silver	Panel	Silver	Panel	Silver	Panel	Black
Frame	Silver	Frame	Silver	Frame	Black	Frame	Black
Corner	Light gray	Corner	Black	Corner	Black	Corner	Black

**Product no. / Dimensions**

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

Product no.	H	W	D	Weight (kg)	Panel mount screw pcs
FC4- 9- 9□	37.9	90	90	0.17	4
FC4-14- 9□	37.9	140	90	0.24	4
FC4-14-14□	37.9	140	140	0.33	4
FC4-19- 9□	37.9	190	90	0.31	4
FC4-19-14□	37.9	190	140	0.50	4
FC4-19-19□	37.9	190	190	0.53	4
FC4-24-14□	37.9	240	140	0.51	4
FC4-24-19□	37.9	240	190	0.64	4
FC4-24-24□	37.9	240	240	0.78	4
FC4-29-14□	37.9	290	140	0.60	4
FC4-29-19□	37.9	290	190	0.75	4
FC4-29-24□	37.9	290	240	0.91	4
FC4-29-29□	37.9	290	290	1.07	4
FC4-34-19□	37.9	340	190	0.87	4
FC4-34-24□	37.9	340	240	1.04	4
FC4-34-29□	37.9	340	290	0.94	4
FC4-39-19□	37.9	390	190	0.97	6
FC4-39-24□	37.9	390	240	1.17	6
FC4-39-29□	37.9	390	290	1.37	6
FC4-39-39□	37.9	390	390	1.77	8
FC4-49-24□	37.9	490	240	1.39	6
FC4-49-29□	37.9	490	290	1.64	6
FC4-49-39□	37.9	490	390	2.12	8
FC4-59-29□	37.9	590	290	1.92	6
FC4-59-39□	37.9	590	390	2.46	8
FC5-10-10□	50.4	100	100	0.24	4
FC5-15-10□	50.4	150	100	0.33	4
FC5-15-15□	50.4	150	150	0.44	4
FC5-20-10□	50.4	200	100	0.42	4
FC5-20-15□	50.4	200	150	0.55	4
FC5-20-20□	50.4	200	200	0.68	4
FC5-25-15□	50.4	250	150	0.66	4
FC5-25-20□	50.4	250	200	0.81	4
FC5-25-25□	50.4	250	250	0.97	4
FC5-30-15□	50.4	300	150	0.77	4
FC5-30-20□	50.4	300	200	0.94	4
FC5-30-25□	50.4	300	250	1.11	4
FC5-30-30□	50.4	300	300	1.29	4
FC5-35-20□	50.4	350	200	1.07	4
FC5-35-25□	50.4	350	250	1.26	4
FC5-35-30□	50.4	350	300	1.46	4
FC5-40-20□	50.4	400	200	1.20	6
FC5-40-25□	50.4	400	250	1.42	6
FC5-40-30□	50.4	400	300	1.64	6

Product no.	H	W	D	Weight (kg)	Panel mount screw pcs
FC5-40-40□	50.4	400	400	2.07	8
FC5-50-25□	50.4	500	250	1.66	6
FC5-50-30□	50.4	500	300	1.92	6
FC5-50-40□	50.4	500	400	2.44	8
FC5-60-30□	50.4	600	300	2.22	6
FC5-60-40□	50.4	600	400	2.81	8
FC6-10-10□	62.9	100	100	0.26	4
FC6-15-10□	62.9	150	100	0.35	4
FC6-15-15□	62.9	150	150	0.47	4
FC6-20-10□	62.9	200	100	0.45	4
FC6-20-15□	62.9	200	150	0.58	4
FC6-20-20□	62.9	200	200	0.72	4
FC6-25-15□	62.9	250	150	0.70	4
FC6-25-20□	62.9	250	200	0.85	4
FC6-25-25□	62.9	250	250	1.01	4
FC6-30-15□	62.9	300	150	0.81	4
FC6-30-20□	62.9	300	200	0.99	4
FC6-30-25□	62.9	300	250	1.16	4
FC6-30-30□	62.9	300	300	1.35	4
FC6-35-20□	62.9	350	200	1.12	4
FC6-35-25□	62.9	350	250	1.32	4
FC6-35-30□	62.9	350	300	1.52	4
FC6-40-20□	62.9	400	200	1.25	6
FC6-40-25□	62.9	400	250	1.47	6
FC6-40-30□	62.9	400	300	1.70	6
FC6-40-40□	62.9	400	400	2.15	8
FC6-50-25□	62.9	500	250	1.72	6
FC6-50-30□	62.9	500	300	1.99	6
FC6-50-40□	62.9	500	400	2.52	8
FC6-60-30□	62.9	600	300	2.29	6
FC6-60-40□	62.9	600	400	2.43	8
FC8-10-10□	75.4	100	100	0.28	4
FC8-15-10□	75.4	150	100	0.38	4
FC8-15-15□	75.4	150	150	0.50	4
FC8-20-10□	75.4	200	100	0.48	4
FC8-20-15□	75.4	200	150	0.62	4
FC8-20-20□	75.4	200	200	0.76	4
FC8-25-15□	75.4	250	150	0.74	4
FC8-25-20□	75.4	250	200	0.90	4
FC8-25-25□	75.4	250	250	1.07	4
FC8-30-15□	75.4	300	150	0.86	4
FC8-30-20□	75.4	300	200	1.04	4
FC8-30-25□	75.4	300	250	1.23	4
FC8-30-30□	75.4	300	300	1.42	4



Product no.	H	W	D	Weight (kg)	Panel mount screw pcs
FC 8-35-20□	75.4	350	200	1.19	4
FC 8-35-25□	75.4	350	250	1.39	4
FC 8-35-30□	75.4	350	300	1.51	4
FC 8-40-20□	75.4	400	200	1.32	6
FC 8-40-25□	75.4	400	250	1.46	6
FC 8-40-30□	75.4	400	300	1.78	6
FC 8-40-40□	75.4	400	400	2.24	8
FC 8-50-25□	75.4	500	250	1.81	6
FC 8-50-30□	75.4	500	300	2.08	6
FC 8-50-40□	75.4	500	400	2.62	8
FC 8-60-30□	75.4	600	300	2.39	6
FC 8-60-40□	75.4	600	400	3.00	8
FC10-10-10□	100.4	100	100	0.31	4
FC10-15-10□	100.4	150	100	0.43	4
FC10-15-15□	100.4	150	150	0.56	4
FC10-20-10□	100.4	200	100	0.54	4
FC10-20-15□	100.4	200	150	0.70	4
FC10-20-20□	100.4	200	200	0.85	4
FC10-25-15□	100.4	250	150	0.83	4
FC10-25-20□	100.4	250	200	1.01	4
FC10-25-25□	100.4	250	250	1.19	4
FC10-30-15□	100.4	300	150	0.97	4
FC10-30-20□	100.4	300	200	1.16	4
FC10-30-25□	100.4	300	250	1.36	4
FC10-30-30□	100.4	300	300	1.57	4
FC10-35-20□	100.4	350	200	1.32	4
FC10-35-25□	100.4	350	250	1.54	4
FC10-35-30□	100.4	350	300	1.77	4
FC10-40-20□	100.4	400	200	1.47	6
FC10-40-25□	100.4	400	250	1.72	6
FC10-40-30□	100.4	400	300	1.96	6
FC10-40-40□	100.4	400	400	2.45	8
FC10-50-25□	100.4	500	250	1.99	6
FC10-50-30□	100.4	500	300	2.27	6
FC10-50-40□	100.4	500	400	2.84	8
FC10-60-30□	100.4	600	300	2.60	6
FC10-60-40□	100.4	600	400	2.70	8
FC13-10-10□	125.4	100	100	0.35	4
FC13-15-10□	125.4	150	100	0.47	4
FC13-15-15□	125.4	150	150	0.61	4
FC13-20-10□	125.4	200	100	0.59	4
FC13-20-15□	125.4	200	150	0.75	4
FC13-20-20□	125.4	200	200	0.92	4
FC13-25-15□	125.4	250	150	0.90	4

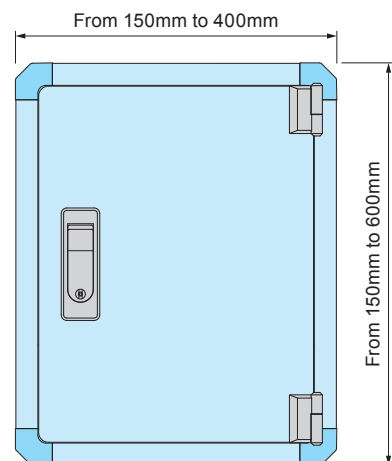
Product no.	H	W	D	Weight (kg)	Panel mount screw pcs
FC13-25-20□	125.4	250	200	1.08	4
FC13-25-25□	125.4	250	250	1.27	4
FC13-30-15□	125.4	300	150	1.04	4
FC13-30-20□	125.4	300	200	1.24	4
FC13-30-25□	125.4	300	250	1.44	4
FC13-30-30□	125.4	300	300	1.66	4
FC13-35-20□	125.4	350	200	1.40	4
FC13-35-25□	125.4	350	250	1.63	4
FC13-35-30□	125.4	350	300	1.86	4
FC13-40-20□	125.4	400	200	1.56	6
FC13-40-25□	125.4	400	250	1.81	6
FC13-40-30□	125.4	400	300	2.06	6
FC13-40-40□	125.4	400	400	2.56	8
FC13-50-25□	125.4	500	250	2.09	6
FC13-50-30□	125.4	500	300	2.38	6
FC13-50-40□	125.4	500	400	2.96	8
FC13-60-30□	125.4	600	300	2.89	6
FC13-60-40□	125.4	600	400	3.36	8
FC15-10-10□	150.4	100	100	0.40	4
FC15-15-10□	150.4	150	100	0.54	4
FC15-15-15□	150.4	150	150	0.70	4
FC15-20-10□	150.4	200	100	0.68	4
FC15-20-15□	150.4	200	150	0.85	4
FC15-20-20□	150.4	200	200	1.04	4
FC15-25-15□	150.4	250	150	1.02	4
FC15-25-20□	150.4	250	200	1.22	4
FC15-25-25□	150.4	250	250	1.42	4
FC15-30-15□	150.4	300	150	1.17	4
FC15-30-20□	150.4	300	200	1.40	4
FC15-30-25□	150.4	300	250	1.62	4
FC15-30-30□	150.4	300	300	1.85	4
FC15-35-20□	150.4	350	200	1.58	4
FC15-35-25□	150.4	350	250	1.82	4
FC15-35-30□	150.4	350	300	2.07	4
FC15-40-20□	150.4	400	200	1.76	6
FC15-40-25□	150.4	400	250	2.02	6
FC15-40-30□	150.4	400	300	2.29	6
FC15-40-40□	150.4	400	400	2.83	8
FC15-50-25□	150.4	500	250	2.32	6
FC15-50-30□	150.4	500	300	2.63	6
FC15-50-40□	150.4	500	400	3.25	8
FC15-60-30□	150.4	600	300	2.98	6
FC15-60-40□	150.4	600	400	3.66	8



- 108 different sizes in 4 different color variations available.
- Easy access to the inside of the case with open/closing cover.
- Both with and without key lock types are available.
- Suitable for touch panel display, industrial control equipment and many others.

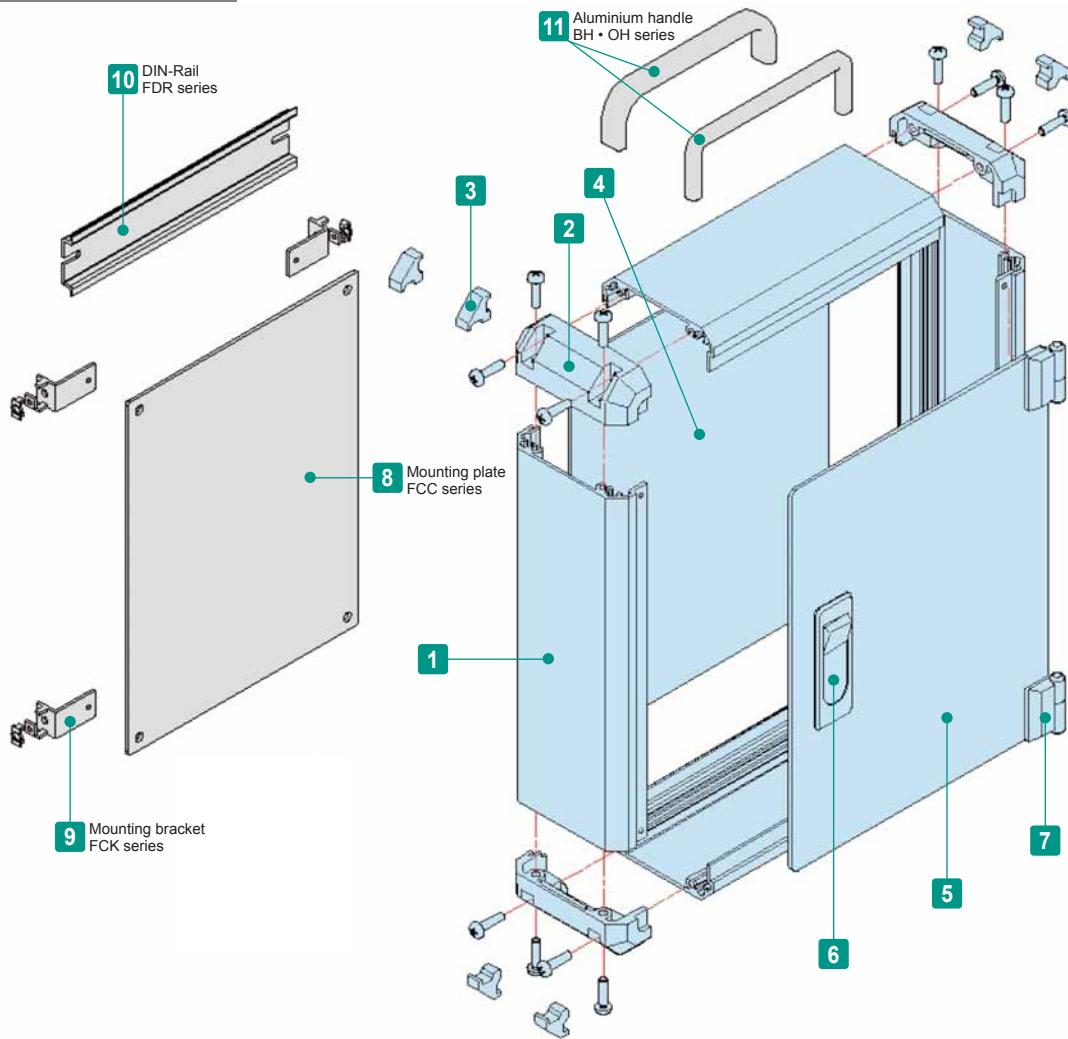
Technical Data
Protection class: IP40

### Custom width / length available



- Flexible frame width / length in 1mm intervals.
- No minimum order quantity and short lead time for small quantity order.

Assembly drawings



Included screws  
 M4-15 pan head, trivalent chromate / black trivalent chromate x 16 pcs  
 M3-5 pan head, trivalent chromate / black trivalent chromate x 2 pcs or 3 pcs  
 M3-5 countersunk trivalent chromate / black trivalent chromate x 2 pcs or 3 pcs  
 M4-8 trivalent chromate with washer x 2 pcs or 4 pcs  
 M4-6 trivalent chromate with washer x 2 pcs or 4 pcs

Components

No.	Part name	Pcs	Material	Color / Finish
1	Frame	4	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Corner block	4	ABS UL94HB	Light gray • Black
3	Blind plug	8	TPE	Light gray • Black
4	Slide panel	1	Aluminium A1050P t=1.5	Silver / Hairline brushed & Anodized
			Aluminium A1100P t=1.5	Black / Painted
5	Open-closing panel	1	Aluminium A1050P t=2.0	Silver / Hairline brushed & Anodized
			Aluminium A1050P t=2.0	Black / Anodized
6	Flat handle	1 set	Diecast zinc	Silver • Black / Painted
7	Hinge	1 set	Diecast zinc	Silver • Black / Painted
-	Panel protection pad	6	Polyolefin foam	Black

Accessories (Optional parts)



8 Mounting plate FCC series  
 See page FCC • FCK-1 ~ FCC • FCK-2



9 Mounting bracket FCK series  
 See page FCC • FCK-2



10 DIN-Rail FDR series  
 MR • FDR-1



11 Aluminium handle BH • OH series  
 See See page BH • Z-P-1 & OH • KH-1



**Flat Handle Type**



**Color Type**

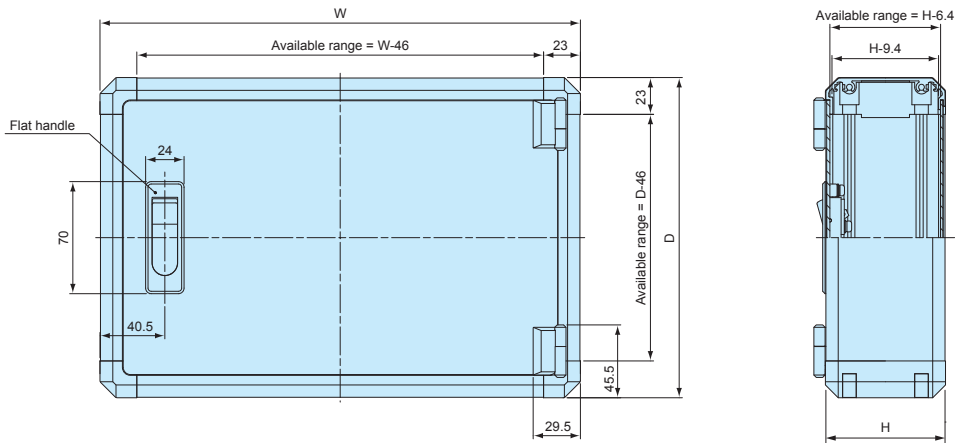
GS		BS		BX		BB	
Panel	Silver	Panel	Silver	Panel	Silver	Panel	Black
Frame	Silver	Frame	Silver	Frame	Black	Frame	Black
Corner	Light gray	Corner	Black	Corner	Black	Corner	Black
Flat handle	Silver	Flat handle	Silver	Flat handle	Black	Flat handle	Black

**FCW dimensions**

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

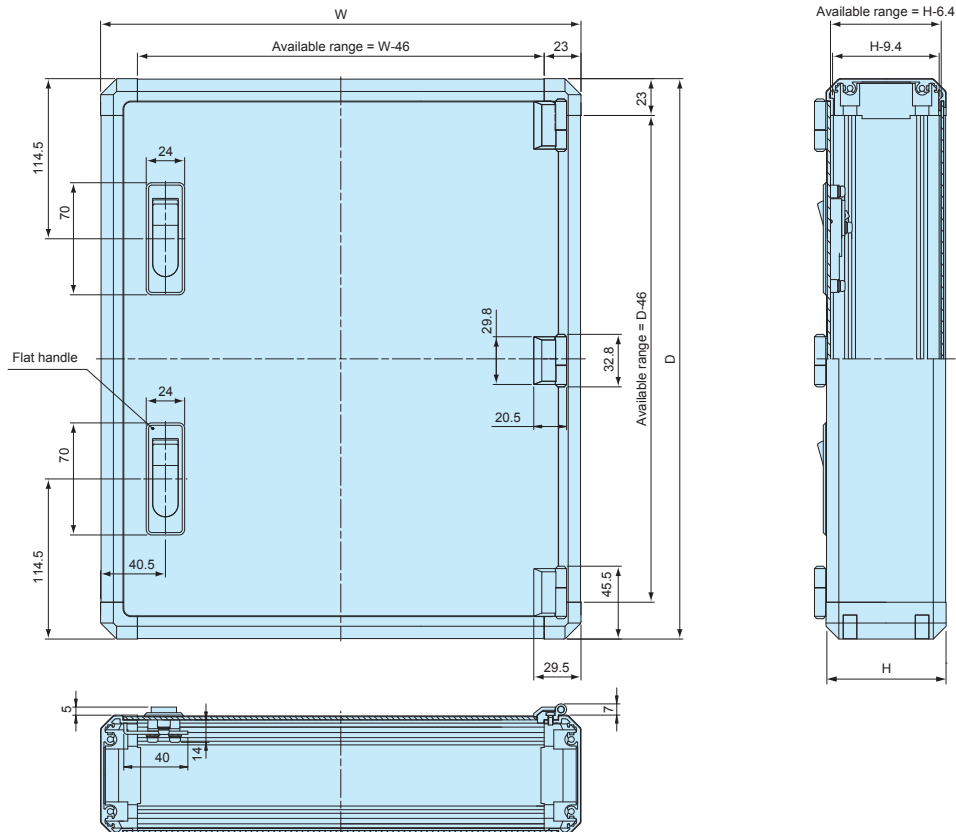
**Handle - 1 pc / Hinge - 2 pcs type**

Not applicable for FCW□-30-50, FCW□-40-50, and FCW□-40-60 models.



**Handle - 2 pcs / Hinge - 3 pcs type**

Applicable for FCW□-30-50, FCW□-40-50, and FCW□-40-60 models.



Specify your order with complete combination product number as per below

# FCW 5 - 20 - 15



Flat Handle Type  
( N or K )



Color Code  
( GS, BS, BX, or BB )

## Product no. / Dimensions

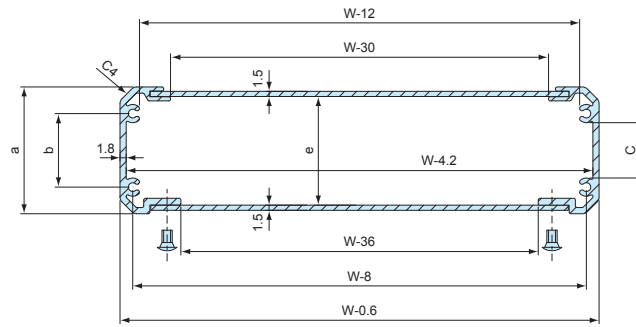
Product no.	H	W	D	Weight (kg)	Flat handle / Hinge pcs
FCW5-15-20□□	50.4	150	200	0.69	1 / 2
FCW5-15-25□□	50.4	150	250	0.80	1 / 2
FCW5-20-15□□	50.4	200	150	0.69	1 / 2
FCW5-20-20□□	50.4	200	200	0.83	1 / 2
FCW5-20-25□□	50.4	200	250	0.97	1 / 2
FCW5-20-30□□	50.4	200	300	1.11	1 / 2
FCW5-25-25□□	50.4	250	250	1.14	1 / 2
FCW5-25-30□□	50.4	250	300	1.30	1 / 2
FCW5-25-40□□	50.4	250	400	1.63	1 / 2
FCW5-30-20□□	50.4	300	200	1.11	1 / 2
FCW5-30-30□□	50.4	300	300	1.50	1 / 2
FCW5-30-40□□	50.4	300	400	1.87	1 / 2
FCW5-30-50□□	50.4	300	500	2.28	2 / 3
FCW5-35-25□□	50.4	350	250	1.47	1 / 2
FCW5-40-30□□	50.4	400	300	1.88	1 / 2
FCW5-40-40□□	50.4	400	400	2.37	1 / 2
FCW5-40-50□□	50.4	400	500	2.82	2 / 3
FCW5-40-60□□	50.4	400	600	3.28	2 / 3
FCW6-15-20□□	62.9	150	200	0.72	1 / 2
FCW6-15-25□□	62.9	150	250	0.84	1 / 2
FCW6-20-15□□	62.9	200	150	0.72	1 / 2
FCW6-20-20□□	62.9	200	200	0.86	1 / 2
FCW6-20-25□□	62.9	200	250	1.01	1 / 2
FCW6-20-30□□	62.9	200	300	1.16	1 / 2
FCW6-25-25□□	62.9	250	250	1.18	1 / 2
FCW6-25-30□□	62.9	250	300	1.35	1 / 2
FCW6-25-40□□	62.9	250	400	1.69	1 / 2
FCW6-30-20□□	62.9	300	200	1.16	1 / 2
FCW6-30-30□□	62.9	300	300	1.55	1 / 2
FCW6-30-40□□	62.9	300	400	1.93	1 / 2
FCW6-30-50□□	62.9	300	500	2.35	2 / 3
FCW6-35-25□□	62.9	350	250	1.46	1 / 2
FCW6-40-30□□	62.9	400	300	1.94	1 / 2
FCW6-40-40□□	62.9	400	400	2.44	1 / 2
FCW6-40-50□□	62.9	400	500	2.94	2 / 3
FCW6-40-60□□	62.9	400	600	3.36	2 / 3
FCW8-15-20□□	75.4	150	200	0.76	1 / 2
FCW8-15-25□□	75.4	150	250	0.88	1 / 2
FCW8-20-15□□	75.4	200	150	0.76	1 / 2
FCW8-20-20□□	75.4	200	200	0.91	1 / 2
FCW8-20-25□□	75.4	200	250	1.06	1 / 2
FCW8-20-30□□	75.4	200	300	1.21	1 / 2
FCW8-25-25□□	75.4	250	250	1.24	1 / 2
FCW8-25-30□□	75.4	250	300	1.41	1 / 2
FCW8-25-40□□	75.4	250	400	1.76	1 / 2
FCW8-30-20□□	75.4	300	200	1.21	1 / 2
FCW8-30-30□□	75.4	300	300	1.62	1 / 2
FCW8-30-40□□	75.4	300	400	2.02	1 / 2
FCW8-30-50□□	75.4	300	500	2.44	2 / 3
FCW8-35-25□□	75.4	350	250	1.59	1 / 2
FCW8-40-30□□	75.4	400	300	2.02	1 / 2
FCW8-40-40□□	75.4	400	400	2.53	1 / 2
FCW8-40-50□□	75.4	400	500	3.05	2 / 3
FCW8-40-60□□	75.4	400	600	3.47	2 / 3

Product no.	H	W	D	Weight (kg)	Flat handle / Hinge pcs
FCW10-15-20□□	100.4	150	200	0.83	1 / 2
FCW10-15-25□□	100.4	150	250	0.97	1 / 2
FCW10-20-15□□	100.4	200	150	0.83	1 / 2
FCW10-20-20□□	100.4	200	200	1.00	1 / 2
FCW10-20-25□□	100.4	200	250	1.17	1 / 2
FCW10-20-30□□	100.4	200	300	1.33	1 / 2
FCW10-25-25□□	100.4	250	250	1.36	1 / 2
FCW10-25-30□□	100.4	250	300	1.55	1 / 2
FCW10-25-40□□	100.4	250	400	1.93	1 / 2
FCW10-30-20□□	100.4	300	200	1.34	1 / 2
FCW10-30-30□□	100.4	300	300	1.77	1 / 2
FCW10-30-40□□	100.4	300	400	2.20	1 / 2
FCW10-30-50□□	100.4	300	500	2.64	2 / 3
FCW10-35-25□□	100.4	350	250	1.74	1 / 2
FCW10-40-30□□	100.4	400	300	2.21	1 / 2
FCW10-40-40□□	100.4	400	400	2.74	1 / 2
FCW10-40-50□□	100.4	400	500	3.27	2 / 3
FCW10-40-60□□	100.4	400	600	3.71	2 / 3
FCW13-15-20□□	125.4	150	200	0.89	1 / 2
FCW13-15-25□□	125.4	150	250	1.04	1 / 2
FCW13-20-15□□	125.4	200	150	0.89	1 / 2
FCW13-20-20□□	125.4	200	200	1.06	1 / 2
FCW13-20-25□□	125.4	200	250	1.32	1 / 2
FCW13-20-30□□	125.4	200	300	1.41	1 / 2
FCW13-25-25□□	125.4	250	250	1.44	1 / 2
FCW13-25-30□□	125.4	250	300	1.63	1 / 2
FCW13-25-40□□	125.4	250	400	2.02	1 / 2
FCW13-30-20□□	125.4	300	200	1.41	1 / 2
FCW13-30-30□□	125.4	300	300	1.94	1 / 2
FCW13-30-40□□	125.4	300	400	2.30	1 / 2
FCW13-30-50□□	125.4	300	500	2.74	2 / 3
FCW13-35-25□□	125.4	350	250	1.83	1 / 2
FCW13-40-30□□	125.4	400	300	2.30	1 / 2
FCW13-40-40□□	125.4	400	400	2.86	1 / 2
FCW13-40-50□□	125.4	400	500	3.39	2 / 3
FCW13-40-60□□	125.4	400	600	3.84	2 / 3
FCW15-15-20□□	150.4	150	200	0.96	1 / 2
FCW15-15-25□□	150.4	150	250	1.07	1 / 2
FCW15-20-15□□	150.4	200	150	0.91	1 / 2
FCW15-20-20□□	150.4	200	200	1.18	1 / 2
FCW15-20-25□□	150.4	200	250	1.37	1 / 2
FCW15-20-30□□	150.4	200	300	1.57	1 / 2
FCW15-25-25□□	150.4	250	250	1.59	1 / 2
FCW15-25-30□□	150.4	250	300	1.80	1 / 2
FCW15-25-40□□	150.4	250	400	2.23	1 / 2
FCW15-30-20□□	150.4	300	200	1.57	1 / 2
FCW15-30-30□□	150.4	300	300	2.05	1 / 2
FCW15-30-40□□	150.4	300	400	2.53	1 / 2
FCW15-30-50□□	150.4	300	500	2.99	2 / 3
FCW15-35-25□□	150.4	350	250	2.02	1 / 2
FCW15-40-30□□	150.4	400	300	2.53	1 / 2
FCW15-40-40□□	150.4	400	400	3.12	1 / 2
FCW15-40-50□□	150.4	400	500	3.68	2 / 3
FCW15-40-60□□	150.4	400	600	4.14	2 / 3

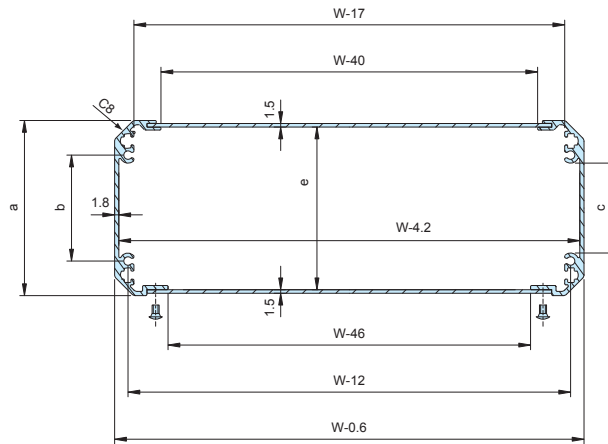
**FC • FCW cross-section view**

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

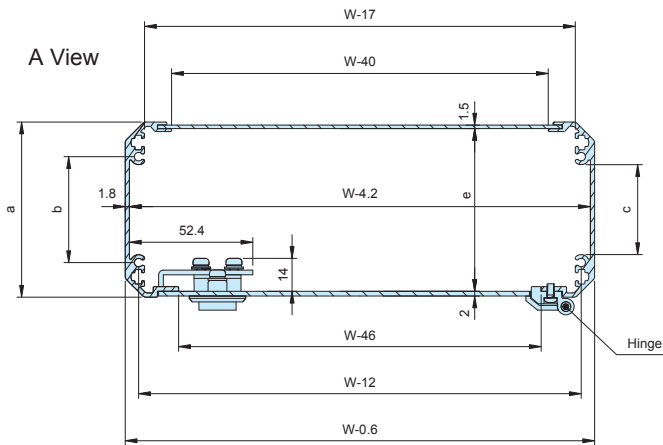
FC4 models



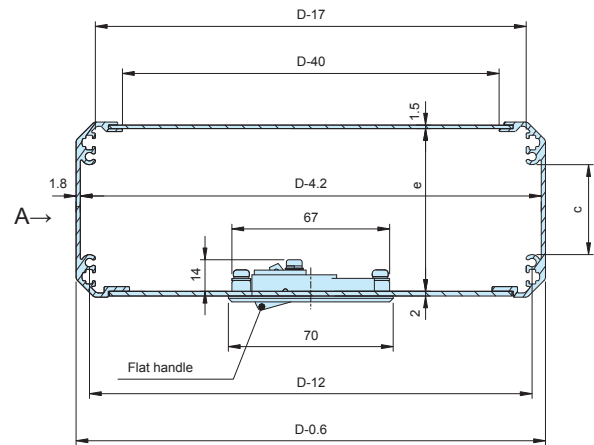
FC5 • FC6 • FC8 • FC10 • FC13 • FC15 models



FCW series



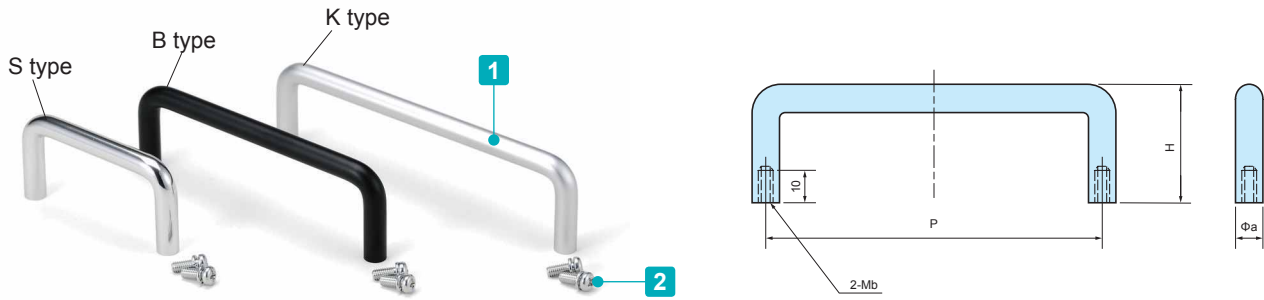
W Cross-section



D cross-section

Box height	a	b	c	e
37.9	36.9	21.4	16.1	31.5
50.4	49.4	20	13.2	44
62.9	61.9	32.5	25.7	56.5
75.4	74.4	45	38.2	69
100.4	99.4	70	63.2	94
125.4	124.4	95	88.2	119
150.4	149.4	120	113.2	144

**BH SERIES**      **ROUNDED ALUMINIUM HANDLE**



**Components**

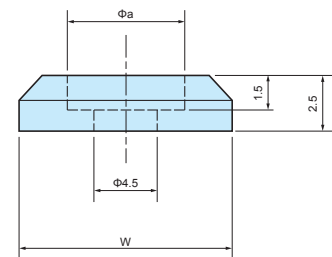
No.	Part name	Pcs	Material	Color / Finish
1	Handle	1	Extruded aluminium A5056S	Polished • Matte anodized
2	Screw	2	Steel	Trivalent chromate

**Product no. / Dimensions**

■ K type only available on BH-100, 120, 150, and 180 models.

Product no.			P	H	a	b	Pack of
● Silver polished	● Black matte anodized	● Silver matte anodized					
BH- 26S	BH- 26B	-	26	25	6	3	2
BH- 30S	BH- 30B	-	30	35	8	4	2
BH- 50S	BH- 50B	-	50	35	8	4	2
BH- 60S	BH- 60B	-	60	35	8	4	2
BH- 70S	BH- 70B	-	70	35	8	4	2
BH- 80S	BH- 80B	-	80	35	8	4	2
BH-100S	BH-100B	BH-100K	100	35	8	4	2
BH-110S	BH-110B	-	110	35	8	4	2
BH-120S	BH-120B	BH-120K	120	35	8	4	2
BH-150S	BH-150B	BH-150K	150	35	8	4	2
BH-180S	BH-180B	BH-180K	180	35	8	4	2

**Z-P SERIES**      **WASHER for HANDLE**



■ Brass washer for BH • KH series.

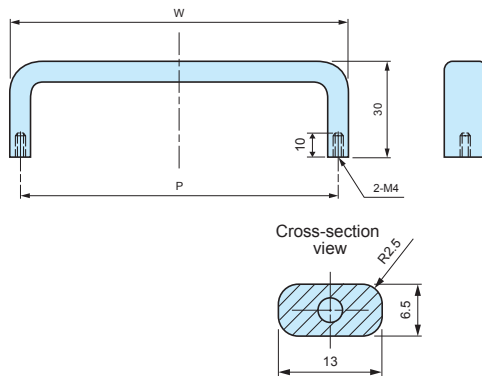
**Product no. / Dimensions**

■ Material / Brass

Product no.		W	a	Pack of
Chrome plated	Black painted			
Z-P6S	Z-P6B	10	6.2	10
Z-P8S	Z-P8B	12	8.2	10



**OH SERIES ALUMINIUM HANDLE**



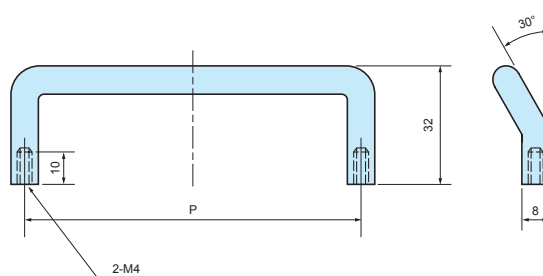
**Components**

No.	Part name	Pcs	Material	Color / Finish
1	Handle	1	Extruded aluminium A6063S-T5	Matte anodized
2	Screw (M4-10 Pan head with spring washer)	2	Steel	Trivalent chromate

**Product no. / Dimensions**

Product no.		P	W	Pack of
● Black matte anodized	● Silver matte anodized			
OH- 55B	OH- 55K	55	61.5	2
OH- 70B	OH- 70K	70	76.5	2
OH- 85B	OH- 85K	85	91.5	2
OH-100B	OH-100K	100	106.5	2
OH-120B	OH-120K	120	126.5	2
OH-140B	OH-140K	140	146.5	2
OH-170B	OH-170K	170	176.5	2

**KH SERIES ANGLED ALUMINIUM HANDLE**



**Components**

No.	Part name	Pcs	Material	Color / Finish
1	Handle	1	Extruded aluminium A5056S	Polished • Matte anodized
2	Screw (M4-10 Pan head with spring washer)	2	Steel	Trivalent chromate

**Product no. / Dimensions**

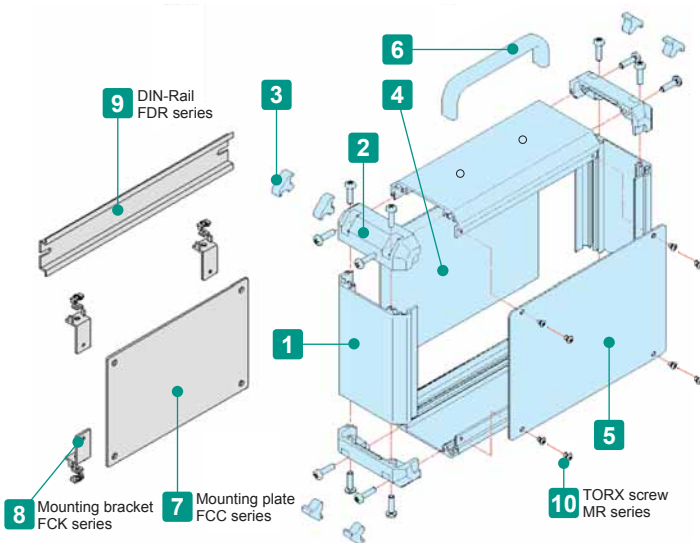
Product no.		P	Pack of
● Silver polished	● Black matte anodized		
KH- 70S	KH- 70B	70	2
KH-100S	KH-100B	100	2

# FCH SERIES

# CONTROL BOX with CARRYING HANDLE



Technical Data
Protection class: IP40



- 23 different sizes in 2 different color variations available.
- Equipped with an aluminium carrying handle for mobile use.
- Comes with a 25kg maximum load carrying handle attachment.
- Simple designed aluminium utility box composed of extruded aluminium frames, aluminium panels and ABS corner joints.

**Included screws**

M4-15 Pan head trivalent chromate x 16 pcs

M3-5 Slotted raised countersunk / Silver = Nickel plated, Black = Trivalent chromate x 8 pcs

M4-10 Pan head trivalent chromate with spring washer x 2 pcs

**Components**

No.	Part name	Pcs	Material	Color / Finish
1	Frame	4	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Corner block	4	ABS UL94HB	Light gray • Black
3	Blind plug	8	TPE	Light gray • Black
4	Slide panel	1	Aluminium A1050P t=1.5	Silver / Hairline brushed & Anodized
			Aluminium A1100P t=1.5	Black / Painted
5	Screwed panel	1	Aluminium A1050P t=1.5	Silver / Hairline brushed & Anodized
			Aluminium A1100P t=1.5	Black / Painted
6	Carrying handle	1	Aluminium A6063S-T5	Silver • Black / Anodized

**Accessories (Optional parts)**



**7** Mounting plate FCC series  
See page FCC • FCK-1 ~ FCC • FCK-2



**8** Mounting bracket FCK series  
See page FCC • FCK-2



**9** DIN-Rail FDR series  
See page MR • FDR-1

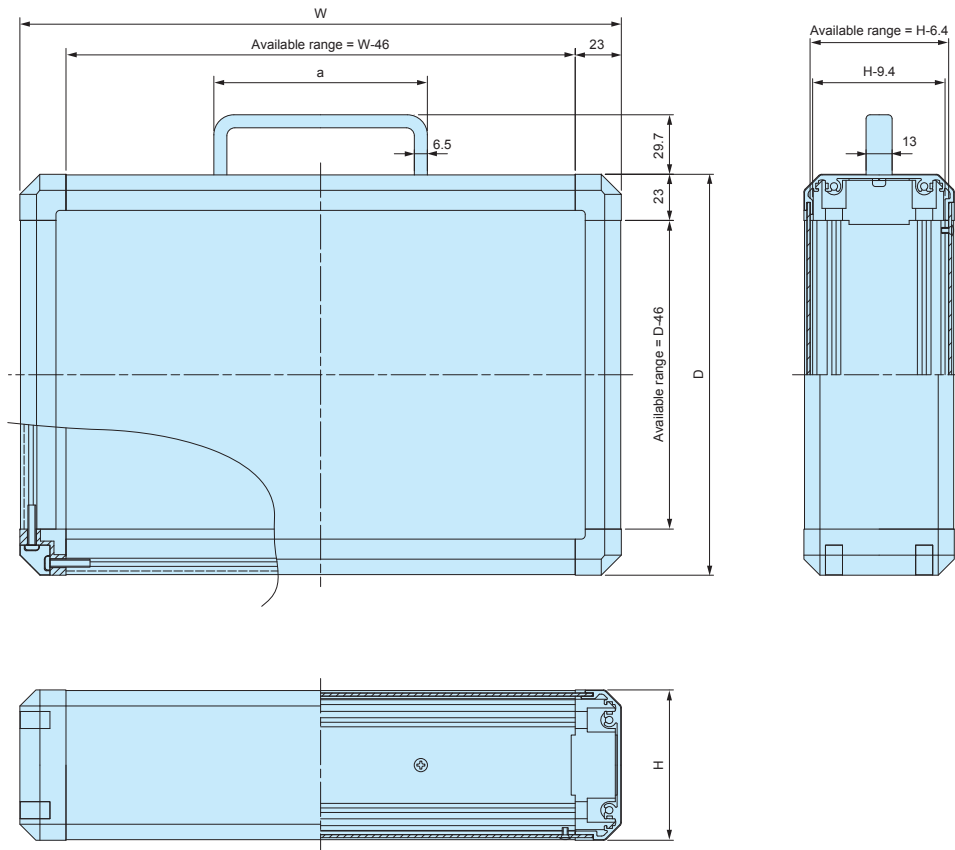


**10** TORX screw MR3-5Z  
See page MR • FDR-1



FCH dimensions

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



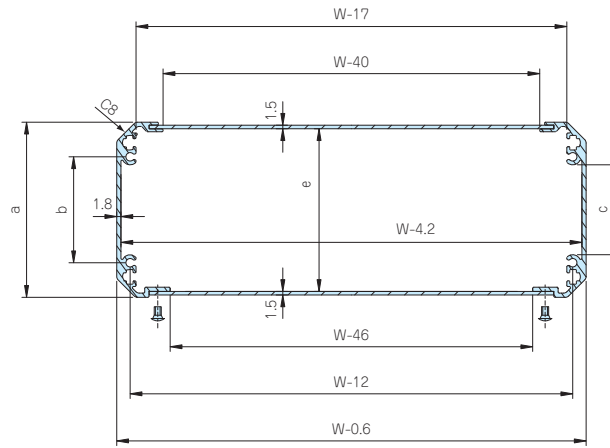
Product no. / Dimensions

Product no.		H	W	D	a	Weight (kg)
● Light gray • Silver	● Black • Black					
FCH 8-20-15GS	FCH 8-20-15BB	75.4	200	150	106.5	0.65
FCH 8-20-20GS	FCH 8-20-20BB	75.4	200	200	106.5	0.79
FCH 8-25-15GS	FCH 8-25-15BB	75.4	250	150	106.5	0.77
FCH 8-25-20GS	FCH 8-25-20BB	75.4	250	200	106.5	0.93
FCH 8-25-25GS	FCH 8-25-25BB	75.4	250	250	106.5	1.10
FCH 8-30-20GS	FCH 8-30-20BB	75.4	300	200	126.5	1.07
FCH 8-30-25GS	FCH 8-30-25BB	75.4	300	250	126.5	1.26
FCH 8-30-30GS	FCH 8-30-30BB	75.4	300	300	126.5	1.45
FCH 8-35-20GS	FCH 8-35-20BB	75.4	350	200	126.5	1.22
FCH 8-35-25GS	FCH 8-35-25BB	75.4	350	250	126.5	1.42
FCH 8-35-30GS	FCH 8-35-30BB	75.4	350	300	126.5	1.54
FCH 8-40-25GS	FCH 8-40-25BB	75.4	400	250	126.5	1.49
FCH 8-40-30GS	FCH 8-40-30BB	75.4	400	300	126.5	1.81
FCH 8-40-40GS	FCH 8-40-40BB	75.4	400	400	126.5	2.27
FCH10-30-20GS	FCH10-30-20BB	100.4	300	200	126.5	1.19
FCH10-30-25GS	FCH10-30-25BB	100.4	300	250	126.5	1.39
FCH10-30-30GS	FCH10-30-30BB	100.4	300	300	126.5	1.60
FCH10-35-20GS	FCH10-35-20BB	100.4	350	200	126.5	1.35
FCH10-35-25GS	FCH10-35-25BB	100.4	350	250	126.5	1.57
FCH10-35-30GS	FCH10-35-30BB	100.4	350	300	126.5	1.80
FCH10-40-25GS	FCH10-40-25BB	100.4	400	250	126.5	1.75
FCH10-40-30GS	FCH10-40-30BB	100.4	400	300	126.5	1.99
FCH10-40-40GS	FCH10-40-40BB	100.4	400	400	126.5	2.48

**FCH cross-section view**

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

FCH series



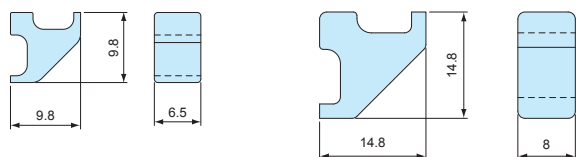
Box height	a	b	c	e
75.4	74.4	45	38.2	69
100.4	99.4	70	63.2	94



**FC-BK SERIES** **BLIND PLUG**

■ Spare / Replacement bling plug for FC • FCW series.

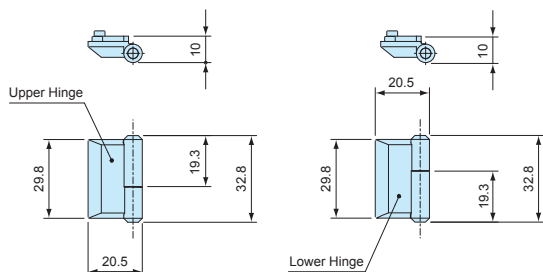
FC-BK-S□ (FC4 models)    FC-BK-□ (Other FC models • FCW series)



Product no.	Material	Color	Pack of
FC-BK-SG	TPE	Light gray	1 set (4 pcs)
FC-BK-SB	TPE	Black	1 set (4 pcs)
FC-BK-G	TPE	Light gray	1 set (4 pcs)
FC-BK-B	TPE	Black	1 set (4 pcs)

**FW SERIES** **HINGE for FCW**

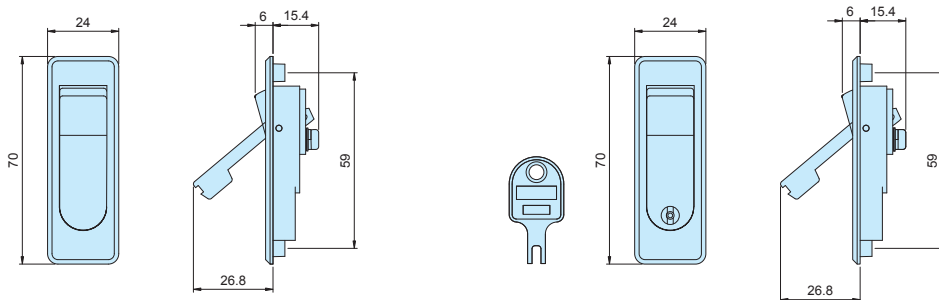
■ Spare / Replacement hinge for FCW series.



Product no.	Material	Color / Finish	Pack of
FW-2S	Diecast zinc	Silver / Painted	1 set (Upper/Lower)
FW-2B	Diecast zinc	Black / Painted	1 set (Upper/Lower)

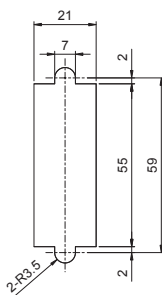
**PH-88 SERIES** **FLAT HANDLE for FCW**

■ Spare / Replacement flat handle for FCW series.



Normal type (without Key)

Key-lock type (with Key)

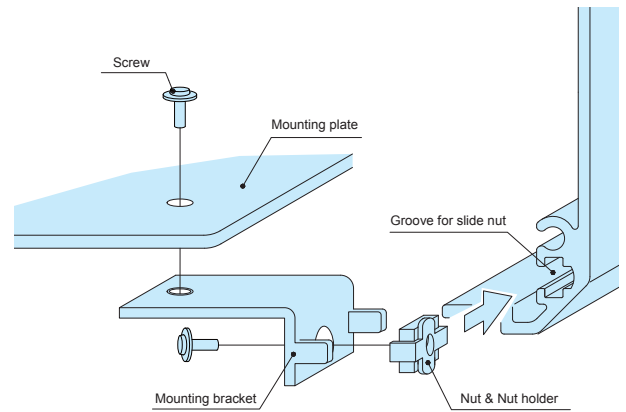


Mounting hole dimensions

Product no.	Key	Material	Color / Finish
PH-88A-2S	without	Diecast zinc	Silver / Painted
PH-88A-2B	without	Diecast zinc	Black / Painted
PH-88 -2S	with	Diecast zinc	Silver / Painted
PH-88 -2B	with	Diecast zinc	Black / Painted

FCC SERIES

MOUNTING PLATE for FC • FCW



How to assemble

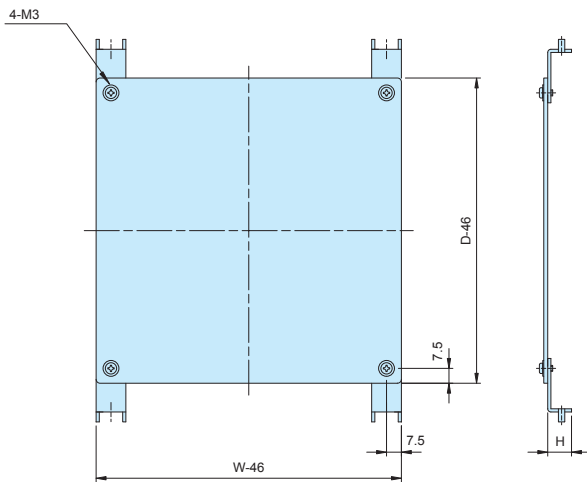
- ① Slide a M3 nut and nut holder into the groove on the frame.
- ② Screw the mounting bracket into the nut holder.
- ③ Screw the mounting plate onto the mounting bracket.

- The mounting bracket comes in 2 different height versions, 12mm and 22mm.
- Use 22mm height version when set on the open/close panel side of FCW series.
- Not suitable for FC4 (H = 37.9mm)
- Mounting brackets (FCK) are included with FCC series.
- DXF/DWG/PDF drawings available on our website.

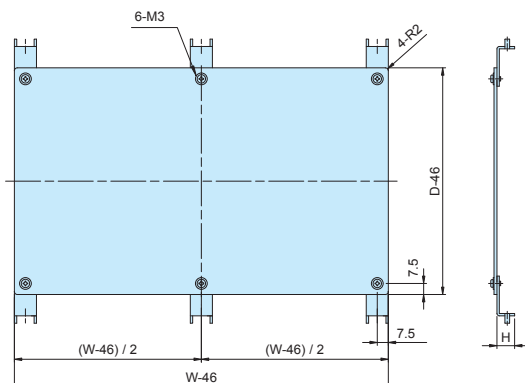
Components

No.	Part name	Material	Color / Finish
1	Mounting plate	Aluminium A1050P t=2.0	Unfinished
2	Mounting bracket	Steel SECC t=1.6	Zinc coated
3	M3 nut	Steel SPCC t=1.6	Trivalent chromate
4	Nut holder	POM	Black
5	Screw	Steel M3-6	Trivalent chromate

For box size (W x D or D x W) 100 x 100mm to 350 x 300mm



For box size (W x D or D x W) 400/500/600 x 200/250/300 mm



Product no. / Dimensions

Product no.	H	Box W x D or D x W	Product no.	H	Box W x D or D x W
FCC10-10-1	12	100×100	FCC10-10-2	22	100×100
FCC15-10-1	12	150×100	FCC15-10-2	22	150×100
FCC15-15-1	12	150×150	FCC15-15-2	22	150×150
FCC20-10-1	12	200×100	FCC20-10-2	22	200×100
FCC20-15-1	12	200×150	FCC20-15-2	22	200×150
FCC20-20-1	12	200×200	FCC20-20-2	22	200×200
FCC25-15-1	12	250×150	FCC25-15-2	22	250×150
FCC25-20-1	12	250×200	FCC25-20-2	22	250×200
FCC25-25-1	12	250×250	FCC25-25-2	22	250×250
FCC30-15-1	12	300×150	FCC30-15-2	22	300×150
FCC30-20-1	12	300×200	FCC30-20-2	22	300×200
FCC30-25-1	12	300×250	FCC30-25-2	22	300×250
FCC30-30-1	12	300×300	FCC30-30-2	22	300×300
FCC35-20-1	12	350×200	FCC35-20-2	22	350×200
FCC35-25-1	12	350×250	FCC35-25-2	22	350×250
FCC35-30-1	12	350×300	FCC35-30-2	22	350×300

Included screws: M3-6 pan head trivalent chromate with flat washer x 8 pcs

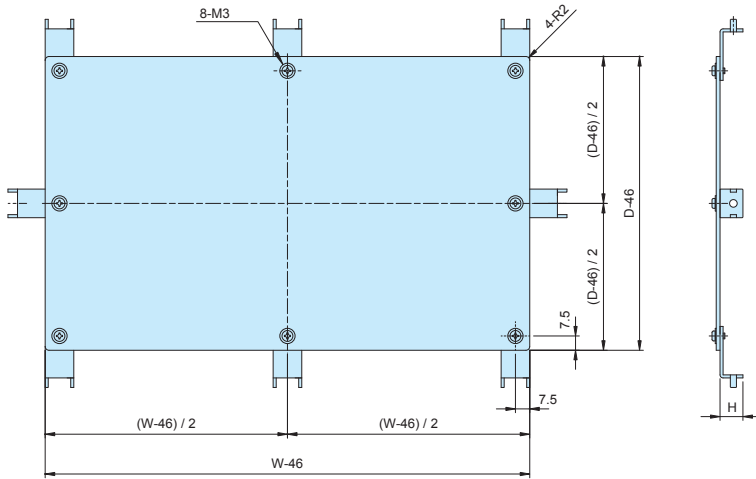
Product no. / Dimensions

Product no.	H	Box W x D or D x W	Product no.	H	Box W x D or D x W
FCC40-20-1	12	400×200	FCC40-20-2	22	400×200
FCC40-25-1	12	400×250	FCC40-25-2	22	400×250
FCC40-30-1	12	400×300	FCC40-30-2	22	400×300
FCC50-25-1	12	500×250	FCC50-25-2	22	500×250
FCC50-30-1	12	500×300	FCC50-30-2	22	500×300
FCC60-30-1	12	600×300	FCC60-30-2	22	600×300

Included screws: M3-6 pan head trivalent chromate with flat washer x 12 pcs

For box size (W x D or D x W) 400/500/600 x 400mm

DXF/DWG/PDF drawings available on our website.



Product no. / Dimensions

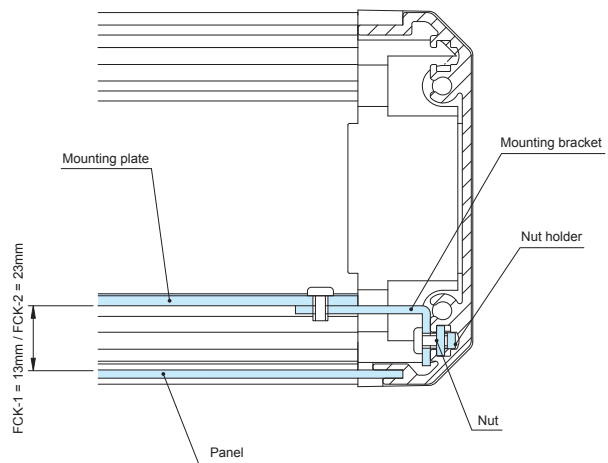
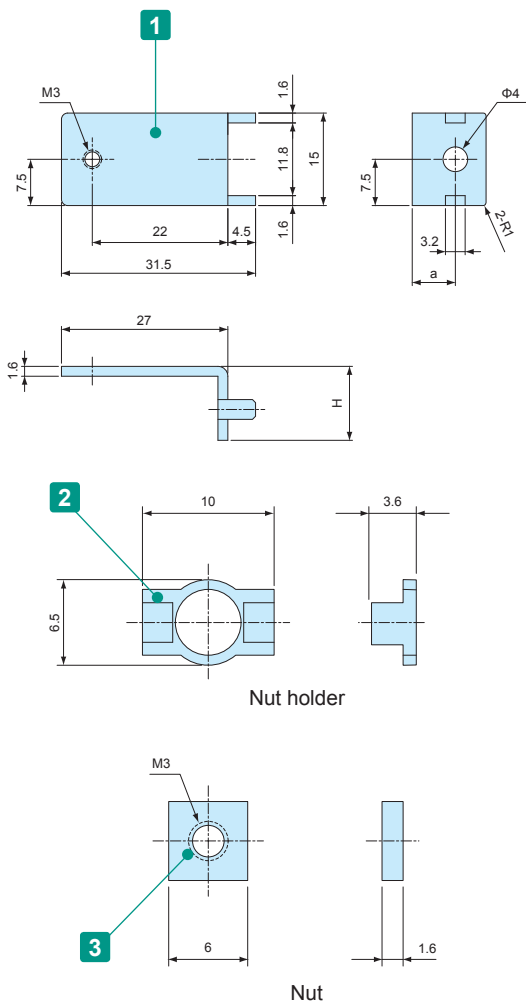
Product no.	H	Box W x D or D x W	Product no.	H	Box W x D or D x W
FCC40-40-1	12	400x400	FCC40-40-2	22	400x400
FCC50-40-1	12	500x400	FCC50-40-2	22	500x400
FCC60-40-1	12	600x400	FCC60-40-2	22	600x400

Included screws: M3-6 pan head trivalent chromate with flat washer x 16 pcs

Accessories (Optional parts)

**FCK SERIES MOUNTING BRACKET**

DXF/DWG/PDF drawings available on our website.



- 2 mounting brackets for PCB or DIN-Rail.
- FCK mounting bracket comes with FCC mounting plate. Additional FCK is not necessary when purchasing FCC series.
- Not suitable for FC4 (H = 37.9mm).

Components

No.	Part name	Material	Color / Finish
1	Mounting bracket	Steel SECC t=1.6	Zinc coated
2	Nut holder	POM	Black
3	M3 nut	Steel SPCC t=1.6	Trivalent chromate

Product no. / Dimensions

Product no.	H	a	Pack of
FCK-1	12	7	10
FCK-2	22	17	10

Included screws: M3-6 pan head trivalent chromate with flat washer x 20 pcs

**MR SERIES**

**SLOTTED RAISED COUNTERSUNK TORX SCREW**



- For use with top / bottom cover.
- Recommended for aesthetic purposes, or for tampering resistance.
- Requires the use of a specialized screwdriver.

**Product no. / Dimensions**

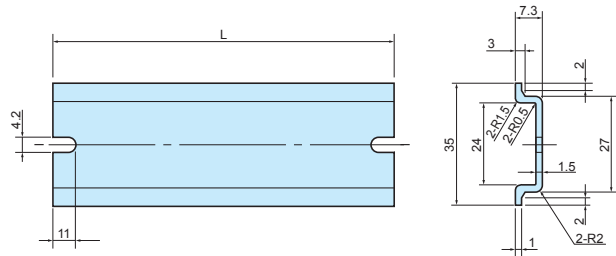
Product no.	M	L	TORX head no.	Material	Color / Finish	Pack of
MR3-5ZS	3	5	T10	Steel	Nickel plated	20
MR3-5ZB	3	5	T10	Steel	Black trivalent chromate	20

**FDR SERIES**

**DIN-RAIL**



- FCK mounting bracket is required for installation.
- Not suitable for FC4 (H = 37.9mm).



**Components**

Material	Color / Finish
Aluminium A6063S-T5	Silver / Anodized

**Product no. / Dimensions**

Product no.	L	Box length
FDR- 50	50	100
FDR-100	100	150
FDR-150	150	200
FDR-205	205	250
FDR-249	249	300
FDR-300	300	350
FDR-350	350	400
FDR-450	450	500
FDR-550	550	600

# EXH HEAT-SINK ALUMINIUM ENCLOSURE

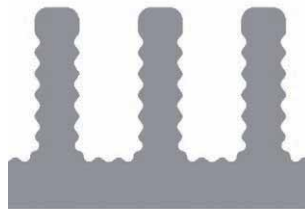
EXH series is an aluminium enclosure with a highly efficient heat-sink top cover. Suitable to be used as fanless PC, power amplifier, and power supply box where heat dissipation is required. Wide range, 30 different sizes available.



## Waved surface heat-sink fins for maximum cooling performance!

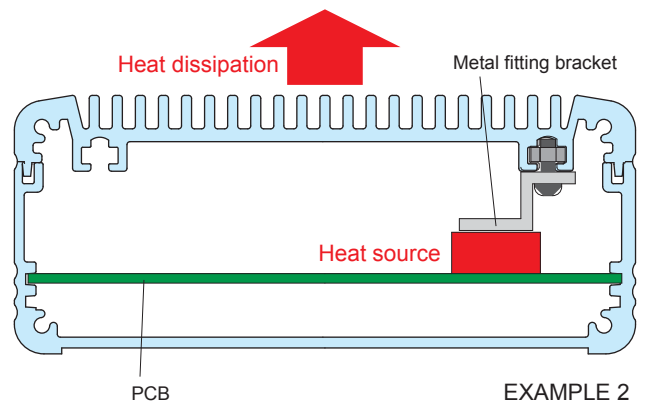
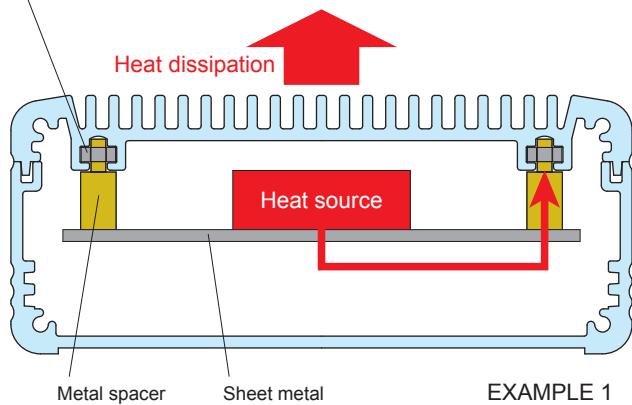
- Each heat-sink fin has a waved surface construction for maximum cooling performance.

### Waved Surface



## HEAT DISSIPATION EXAMPLE

- EXH series has grooves to put M3 nuts inside its heat-sink cover. It is possible to construct a heat conduction route from your heat source to heat-sink cover easily for better heat dissipation performance.





# CUSTOMIZATION EXAMPLE

## CNC MACHINING on HEAT-SINK COVER



Heat-sink plates can be customized with our high speed CNC machines.



## PIN SHAPED FIN CUSTOMIZATION



Pin shaped heat-sink fin can be customized for better cooling performance.

## COLOR ANODIZING

Various colors, such as blue, red, orange, green or purple can be anodized as per your requirements.



■ Not all colors and shades of colors are possible.

## CUSTOM LENGTH AVAILABLE



# APPLICATION EXAMPLE

## STABILIZED DIODE LASER Product by Spectra Quest Lab. (Japan)

Controller



Laser Head



## IOT GATEWAY

Product by VNPT Technology (Vietnam)



## ULTRASONIC NOZZLE CLEANER

Product by ESER Corporation (Japan)



TAKACHI PF plastic enclosure is also adopted.



## ALL-IN-ONE EDGE NODE

Product by SHINWA (Japan)



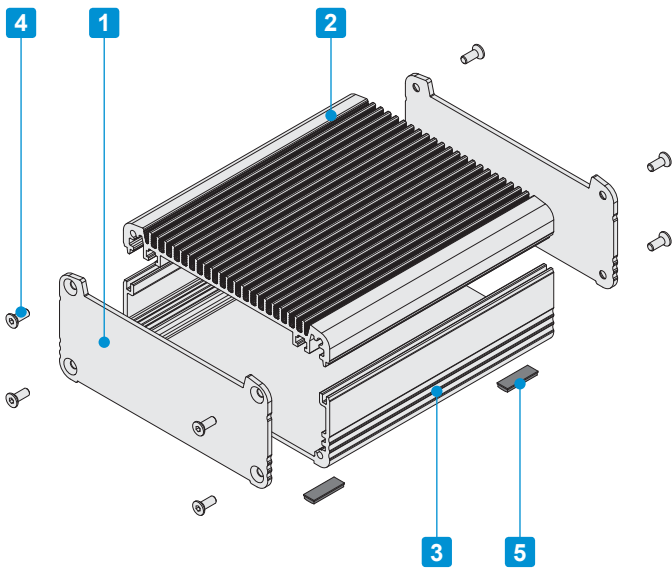
## 4 CHANNEL POWER SWITCHING EDGE NODE

Product by SHINWA (Japan)

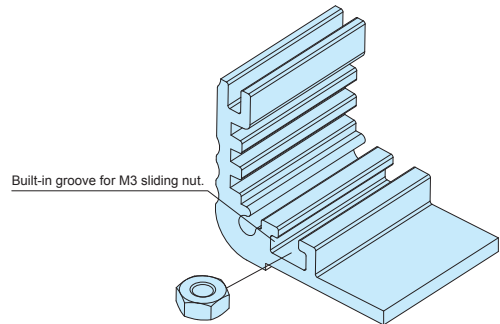


## AUDIO AMPLIFIER





- Aluminum enclosure equipped with a highly efficient heat-sink top cover.
- Suitable to be used as a fanless PC, power amplifier, power supply etc. where heat dissipation is required.
- Selectable in 58 different sizes and 4 different color combinations.
- Grooves for M3 sliding nut are built into the heat-sink top cover and bottom frame (140mm or wider).



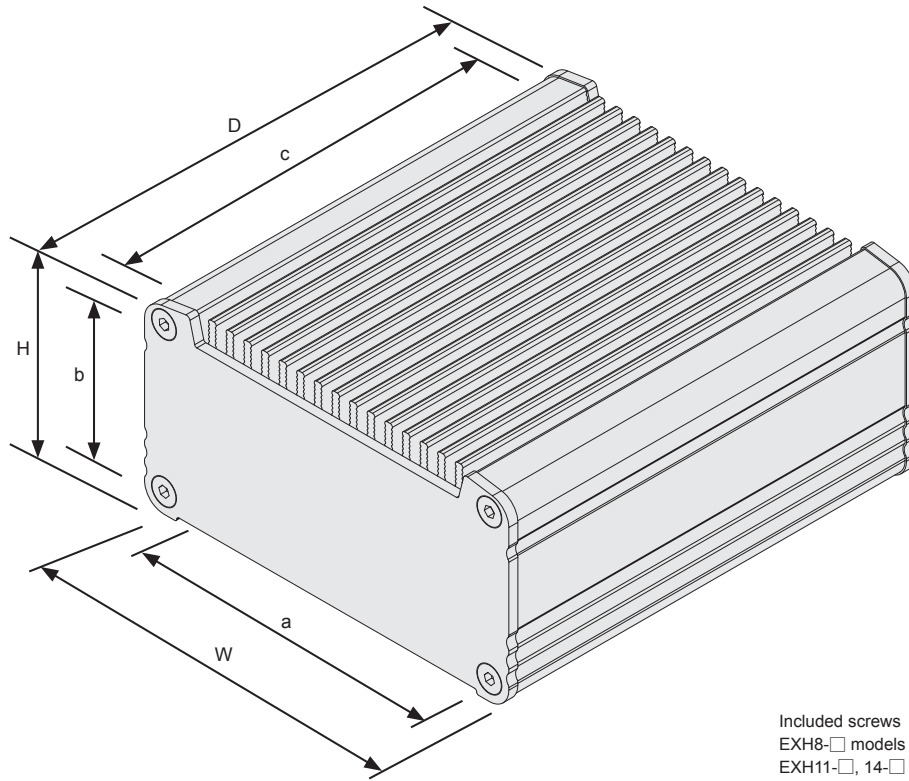
Components

No.	Part name	Pcs	Material	Color / Finish
1	Panel	2	Aluminium A1050P	Silver • Black / Anodized
2	Heat-sink top cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Bottom frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
4	Screw (Hexagonal)	8	Stainless steel	Unfinished
5	Rubber feet	4	Polyurethane	Black

Color Type

Code	S S Silver / Silver	S B Silver / Black	B S Black / Silver	B B Black / Black
Color				

DXF/DWG/PDF drawings available on our website.



Included screws  
 EXH8-□ models : M2.5-8 x 8 pcs  
 EXH11-□, 14-□ models : M3-8 x 8 pcs  
 EXH19-□ models : M4-10 x 8 pcs  
 EXH23-□ models : M5-10 x 8 pcs  
 ※Hexagonal wrench included.

Product no. / Dimensions

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

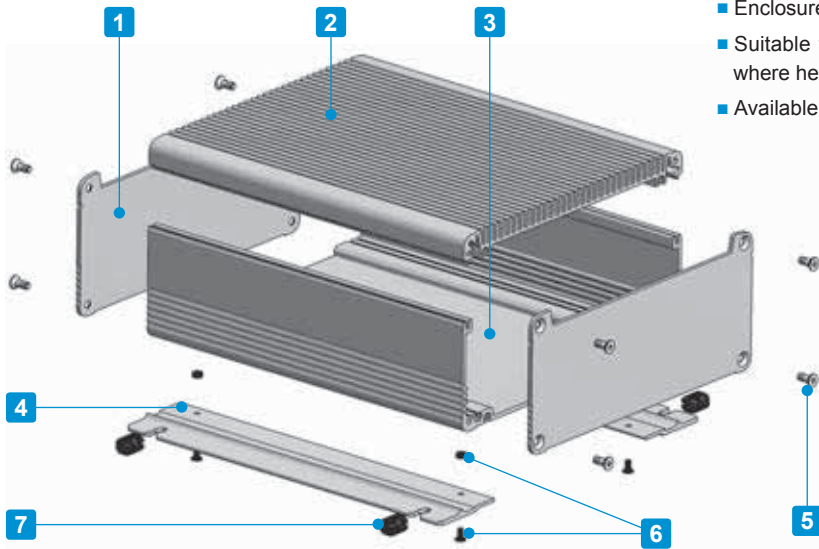
Product no.	External dimensions			Internal dimensions			※Thermal resistance rate (°C/W)
	W	H	D	a	b	c	
EXH 8-3- 6□□	80.6	30.7	60	69.6	20.3	56	7.32
EXH 8-3- 9□□	80.6	30.7	90	69.6	20.3	86	5.65
EXH 8-3-12□□	80.6	30.7	120	69.6	20.3	116	4.72
EXH 8-4- 6□□	80.6	40.7	60	69.6	30.3	56	7.32
EXH 8-4- 9□□	80.6	40.7	90	69.6	30.3	86	5.65
EXH 8-4-12□□	80.6	40.7	120	69.6	30.3	116	4.72
EXH 8-6- 6□□	80.6	55.7	60	69.6	45.3	56	7.32
EXH 8-6- 9□□	80.6	55.7	90	69.6	45.3	86	5.65
EXH 8-6-12□□	80.6	55.7	120	69.6	45.3	116	4.72
EXH11-3- 8□□	106	31.1	78	94.6	19.3	74	4.82
EXH11-3-12□□	106	31.1	118	94.6	19.3	114	3.72
EXH11-3-16□□	106	31.1	164	94.6	19.3	160	3.03
EXH11-5- 8□□	106	46.1	78	94.6	34.3	74	4.82
EXH11-5-12□□	106	46.1	118	94.6	34.3	114	3.72
EXH11-5-16□□	106	46.1	164	94.6	34.3	160	3.03
EXH11-6- 8□□	106	61.1	78	94.6	49.3	74	4.82
EXH11-6-12□□	106	61.1	118	94.6	49.3	114	3.72
EXH11-6-16□□	106	61.1	164	94.6	49.3	160	3.03
EXH14-4-10□□	141	36.1	97	129.6	24.3	93	3.4
EXH14-4-14□□	141	36.1	137	129.6	24.3	133	2.75
EXH14-4-19□□	141	36.1	187	129.6	24.3	183	2.27
EXH14-5-10□□	141	51.1	97	129.6	39.3	93	3.4
EXH14-5-14□□	141	51.1	137	129.6	39.3	133	2.75
EXH14-5-19□□	141	51.1	187	129.6	39.3	183	2.27
EXH14-7-10□□	141	71.1	97	129.6	59.3	93	3.4
EXH14-7-14□□	141	71.1	137	129.6	59.3	133	2.75
EXH14-7-19□□	141	71.1	187	129.6	59.3	183	2.27
EXH14-9-10□□	141	91.1	97	129.6	79.3	93	3.4
EXH14-9-14□□	141	91.1	137	129.6	79.3	133	2.75
EXH14-9-19□□	141	91.1	187	129.6	79.3	183	2.27

Custom length available.

Product no.	External dimensions			Internal dimensions			※Thermal resistance rate (°C/W)
	W	H	D	a	b	c	
NEW EXH19- 4-13□□	186.5	43.5	125	170	26.85	120	1.92
NEW EXH19- 4-18□□	186.5	43.5	177	170	26.85	172	1.56
NEW EXH19- 4-23□□	186.5	43.5	230	170	26.85	225	1.32
NEW EXH19- 4-29□□	186.5	43.5	285	170	26.85	280	1.15
NEW EXH19- 6-13□□	186.5	61.5	125	170	44.85	120	1.92
NEW EXH19- 6-18□□	186.5	61.5	177	170	44.85	172	1.56
NEW EXH19- 6-23□□	186.5	61.5	230	170	44.85	225	1.32
NEW EXH19- 6-29□□	186.5	61.5	285	170	44.85	280	1.15
NEW EXH19- 8-13□□	186.5	81.5	125	170	64.85	120	1.92
NEW EXH19- 8-18□□	186.5	81.5	177	170	64.85	172	1.56
NEW EXH19- 8-23□□	186.5	81.5	230	170	64.85	225	1.32
NEW EXH19- 8-29□□	186.5	81.5	285	170	64.85	280	1.15
NEW EXH19-11-13□□	186.5	106.5	125	170	89.85	120	1.92
NEW EXH19-11-18□□	186.5	106.5	177	170	89.85	172	1.56
NEW EXH19-11-23□□	186.5	106.5	230	170	89.85	225	1.32
NEW EXH19-11-29□□	186.5	106.5	285	170	89.85	280	1.15
NEW EXH23- 5-15□□	232	52	153	215	34.85	147	1.47
NEW EXH23- 5-21□□	232	52	213	215	34.85	207	1.2
NEW EXH23- 5-27□□	232	52	273	215	34.85	267	1.03
NEW EXH23- 5-33□□	232	52	333	215	34.85	327	0.91
NEW EXH23- 8-15□□	232	77	153	215	59.85	147	1.47
NEW EXH23- 8-21□□	232	77	213	215	59.85	207	1.2
NEW EXH23- 8-27□□	232	77	273	215	59.85	267	1.03
NEW EXH23- 8-33□□	232	77	333	215	59.85	327	0.91
NEW EXH23-10-15□□	232	102	153	215	84.85	147	1.47
NEW EXH23-10-21□□	232	102	213	215	84.85	207	1.2
NEW EXH23-10-27□□	232	102	273	215	84.85	267	1.03
NEW EXH23-10-33□□	232	102	333	215	84.85	327	0.91

※Thermal resistance test condition  
 • Ambient air cooling  
 • Heat-sink fins are set perpendicular to the ground with temperature at 60°C.  
 • Anodized aluminum extrusion  
 • Heat source is applied on the opposite side (inner side) of the fins.





- Equipped with flanged bracket for easy wall mounting.
- Enclosure equipped with a highly efficient heat-sink top cover.
- Suitable to be used as a fanless PC, amplifier, power supply etc. where heat dissipation is required.
- Available in 28 different sizes and 4 different color combinations.

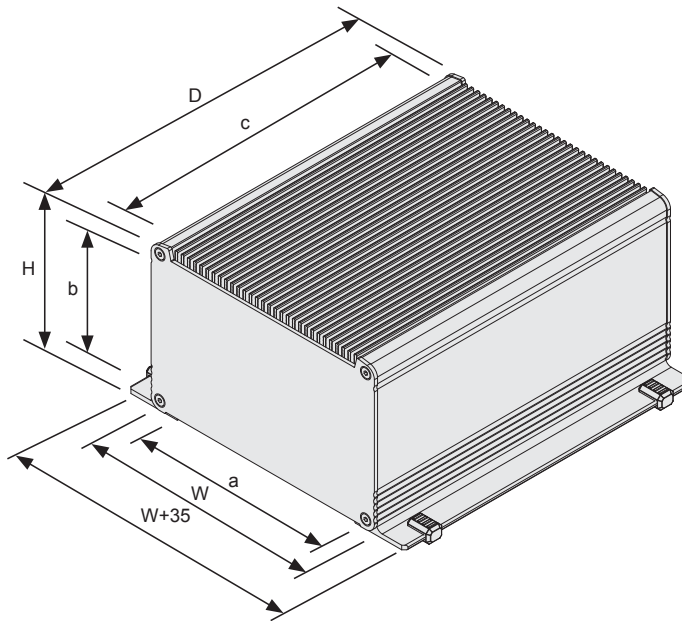
Components

No.	Part name	Pcs	Material	Color / Finish
1	Panel	2	Aluminium A1050P	Silver • Black / Anodized
2	Heat-sink top cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
3	Bottom frame	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
4	Flange bracket	2	Extruded aluminium A6063S-T5	Silver • Black / Anodized
5	Panel screw (Hexagonal)	8	Stainless steel	Unfinished
6	Flange screw	4	Steel	Trivalent chromate
7	Rubber feet	4	Silicone	Black

Color Type

Code	S S Silver / Silver	S B Silver / Black	B S Black / Silver	B B Black / Black
Color				

DXF/DWG/PDF drawings available on our website.



Included screws  
 EXHF19-□ models : M4-10 x 8 pcs  
 EXHF23-□ models : M5-10 x 8 pcs  
 ※Hexagonal wrench included.

- ※Thermal resistance test condition
- Ambient air cooling
  - Heat-sink fins are set perpendicular to the ground with temperature at 60°C.
  - Anodized aluminum extrusion
  - Heat source is applied on the opposite side (inner side) of the fins.

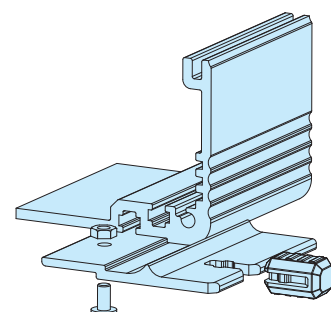
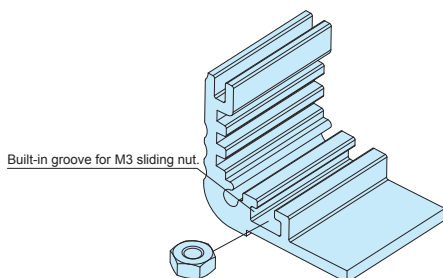
Product no. / Dimensions

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

Product no.	External dimensions			Internal dimensions			※Thermal resistance rate (°C/W)
	W	H	D	a	b	c	
NEW EXHF19- 4-13□□	186.5	45.25	125	170	26.85	120	1.92
NEW EXHF19- 4-18□□	186.5	45.25	177	170	26.85	172	1.56
NEW EXHF19- 4-23□□	186.5	45.25	230	170	26.85	225	1.32
NEW EXHF19- 4-29□□	186.5	45.25	285	170	26.85	280	1.15
NEW EXHF19- 6-13□□	186.5	63.25	125	170	44.85	120	1.92
NEW EXHF19- 6-18□□	186.5	63.25	177	170	44.85	172	1.56
NEW EXHF19- 6-23□□	186.5	63.25	230	170	44.85	225	1.32
NEW EXHF19- 6-29□□	186.5	63.25	285	170	44.85	280	1.15
NEW EXHF19- 8-13□□	186.5	83.25	125	170	64.85	120	1.92
NEW EXHF19- 8-18□□	186.5	83.25	177	170	64.85	172	1.56
NEW EXHF19- 8-23□□	186.5	83.25	230	170	64.85	225	1.32
NEW EXHF19- 8-29□□	186.5	83.25	285	170	64.85	280	1.15
NEW EXHF19-11-13□□	186.5	108.25	125	170	89.85	120	1.92
NEW EXHF19-11-18□□	186.5	108.25	177	170	89.85	172	1.56
NEW EXHF19-11-23□□	186.5	108.25	230	170	89.85	225	1.32
NEW EXHF19-11-29□□	186.5	108.25	285	170	89.85	280	1.15
NEW EXHF23- 5-15□□	232	53.5	153	215	34.85	147	1.47
NEW EXHF23- 5-21□□	232	53.5	213	215	34.85	207	1.2
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NEW EXHF23- 8-33□□	232	78.5	333	215	59.85	327	0.91
NEW EXHF23-10-15□□	232	103.5	153	215	84.85	147	1.47
NEW EXHF23-10-21□□	232	103.5	213	215	84.85	207	1.2
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NEW EXHF23-10-33□□	232	103.5	333	215	84.85	327	0.91

Grooves for M3 sliding nut are found on the heat-sink top cover and bottom frame (140mm or wider).

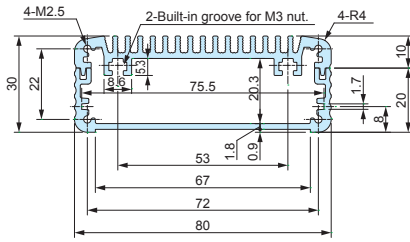
Flange bracket is installed as per the diagram below.



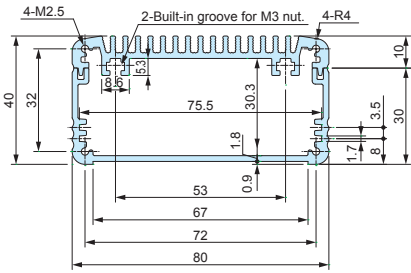
**EXH • EXHF heat-sink top cover / bottom frame**

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

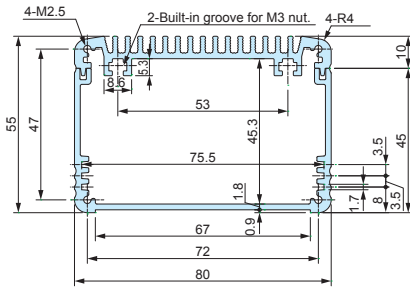
EXH8-3-□



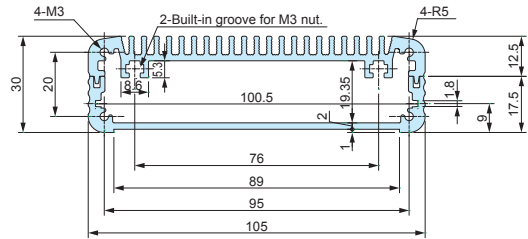
EXH8-4-□



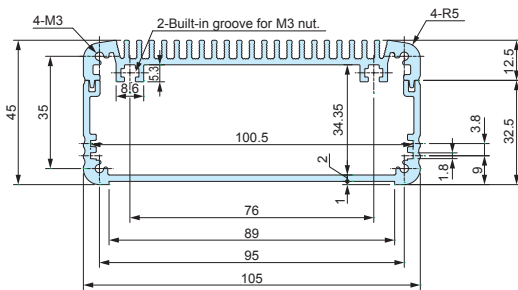
EXH8-6-□



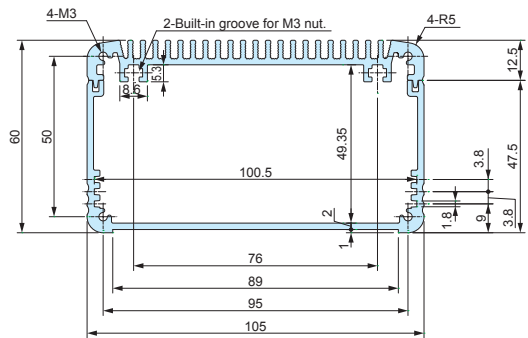
EXH11-3-□



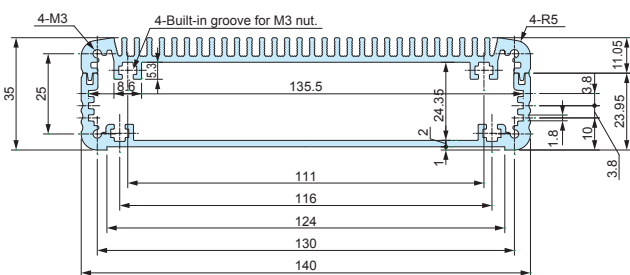
EXH11-5-□



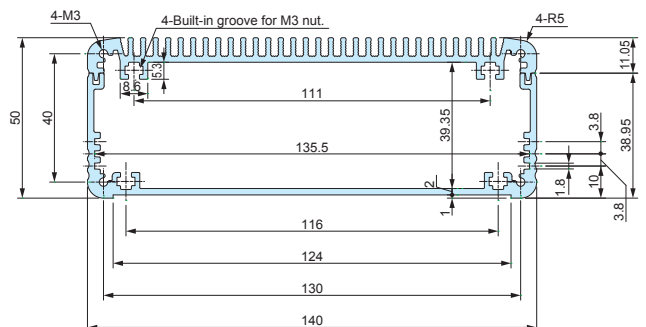
EXH11-6-□



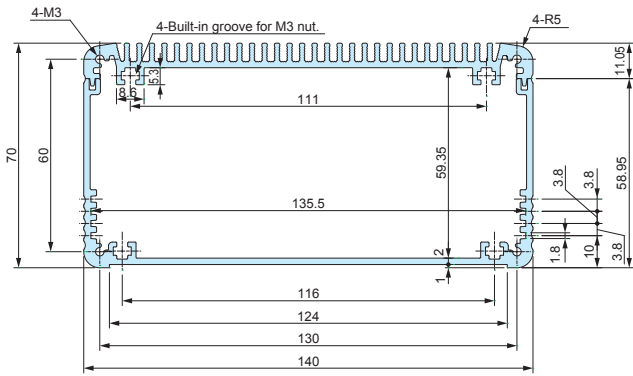
EXH14-4-□



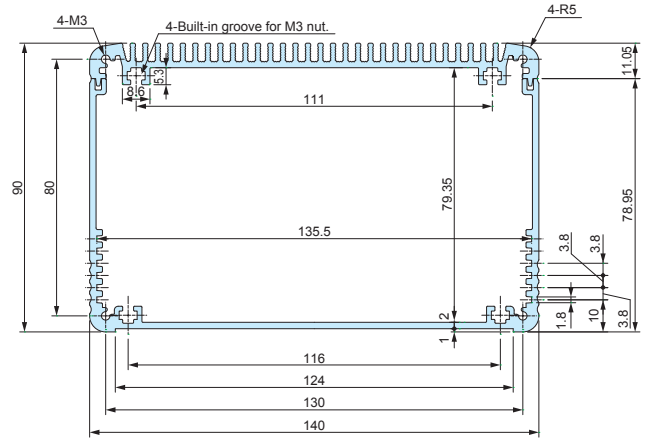
EXH14-5-□



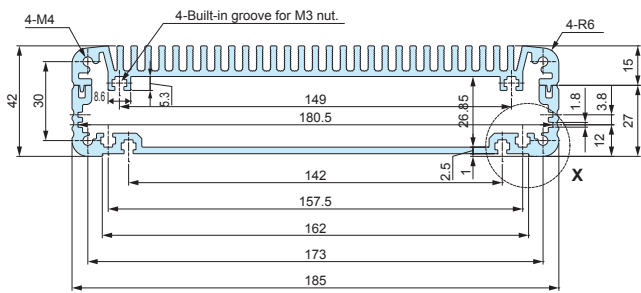
EXH14-7-□



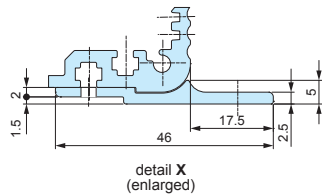
EXH14-9-□



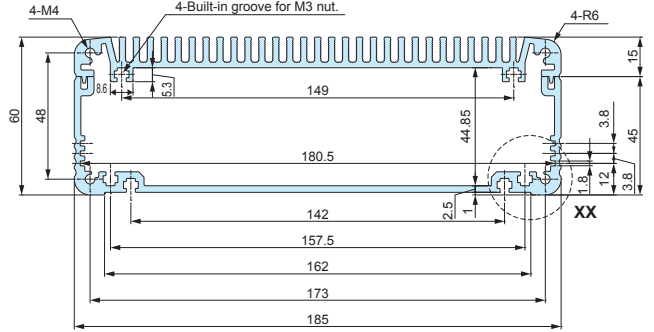
EXH • EXHF19-4-□



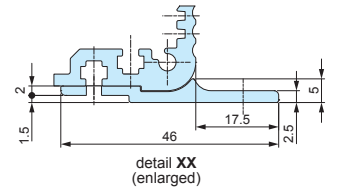
Flange bracket dimensions for EXHF series.



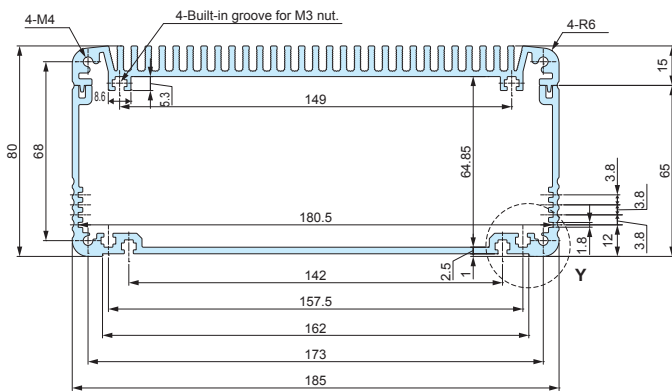
EXH • EXHF19-6-□



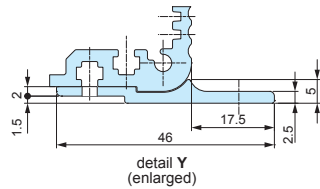
Flange bracket dimensions for EXHF series.



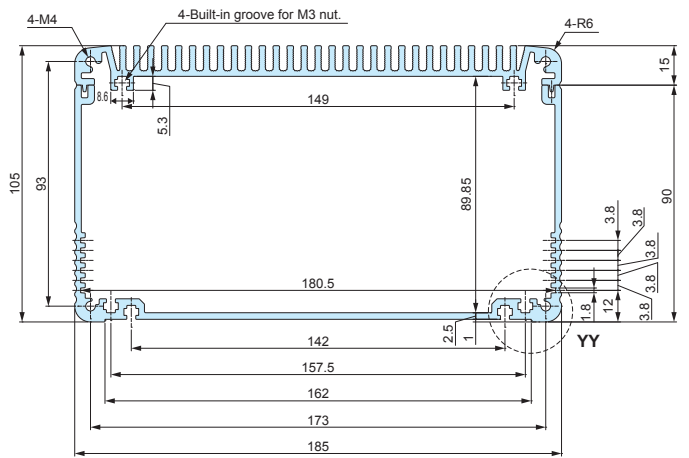
EXH • EXHF19-8-□



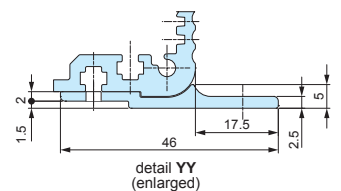
Flange bracket dimensions for EXHF series.



EXH • EXHF19-11-□



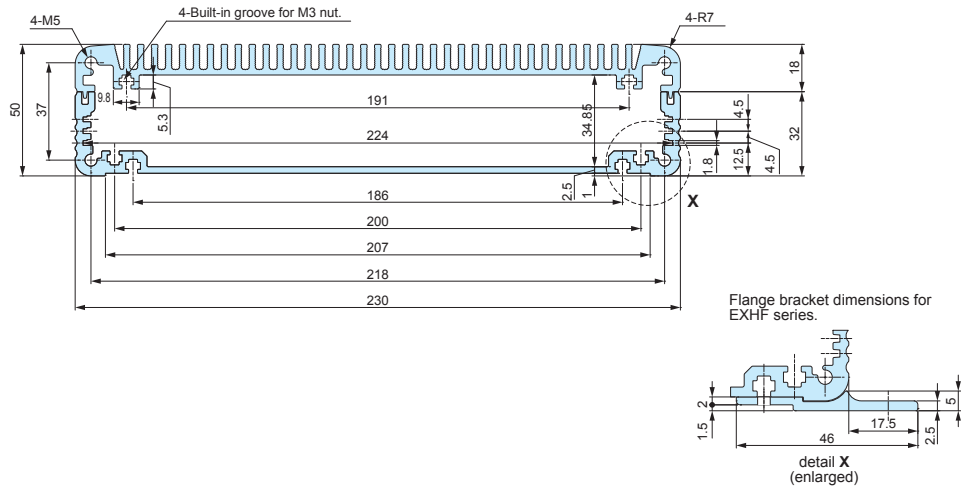
Flange bracket dimensions for EXHF series.



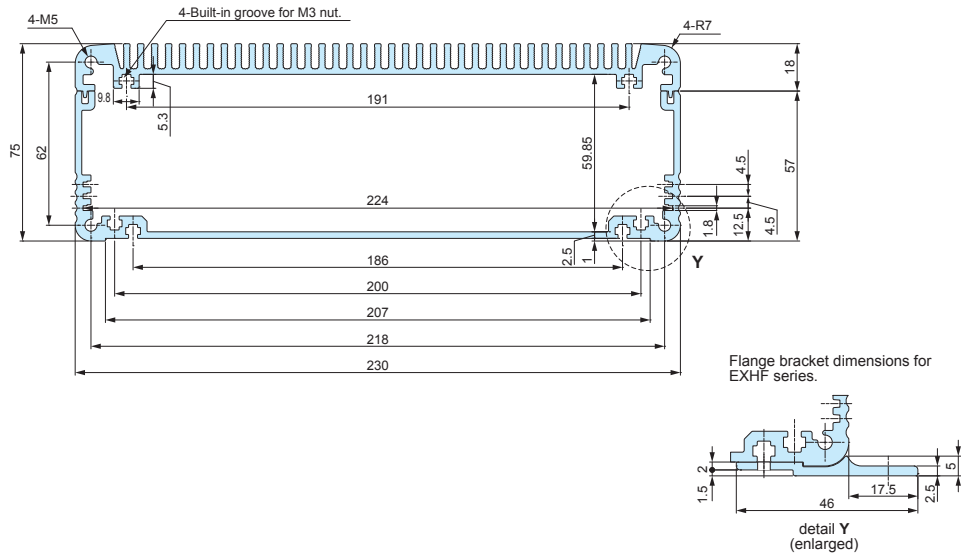
EXH • EXHF heat-sink top cover / bottom frame

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

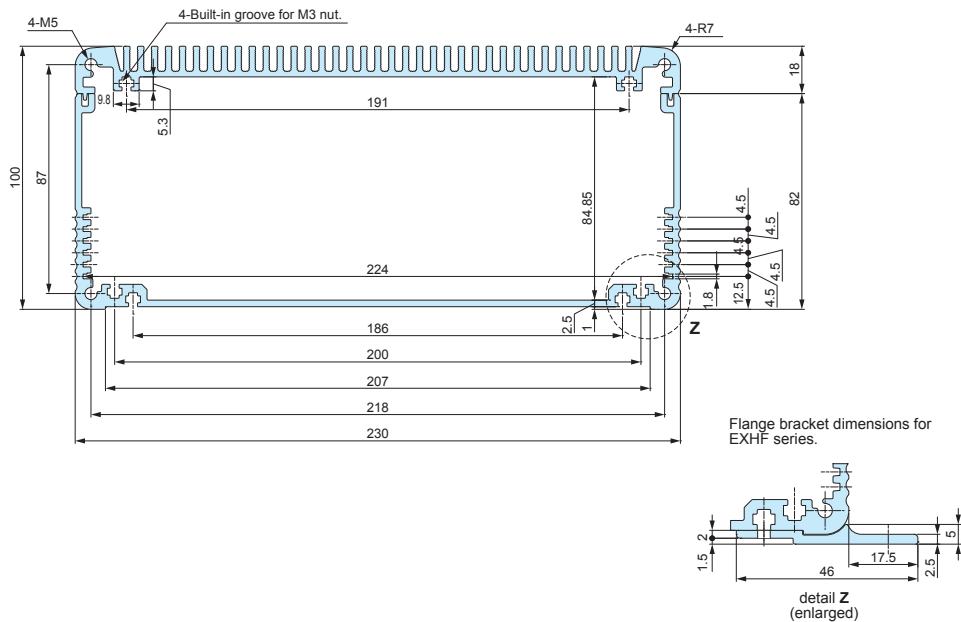
EXH • EXHF23-5-□



EXH • EXHF23-8-□



EXH • EXHF23-10-□





EF SERIES

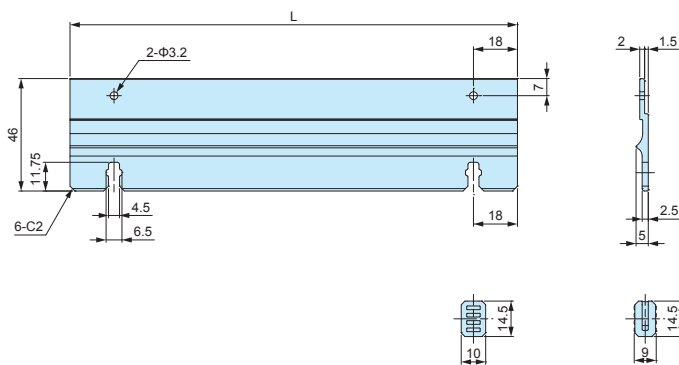
WALL MOUNTING BRACKET for EX • EXH



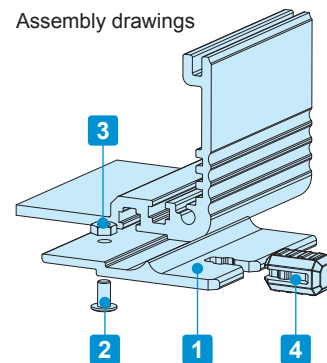
APPLICATION EXAMPLE



- Wall mounting bracket for EX • EXH series. Applicable only for width 185 and 225mm bottom covers.
- Easy installation by inserting the nuts into built-in grooves on EX • EXH bottom cover.
- Rubber feet are included to mask the mounting cutouts when not used for wall mounting.



Assembly drawings



Components

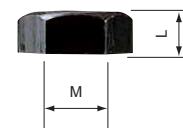
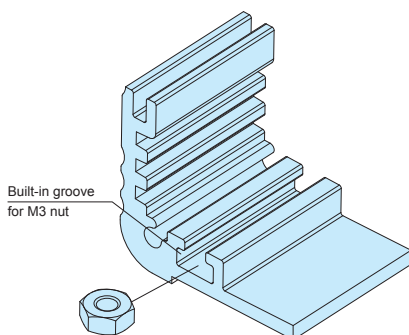
No.	Part name	Pcs	Material	Color / Finish
1	Bracket	2	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Screw	4	Steel M3-6	Black trivalent chromate
3	Nut	4	Steel	Black trivalent chromate
4	Rubber feet	4	Silicone	Black

Product no. / Dimensions

Product no.		L	Suitable enclosure
● Silver	● Black		
NEW EF19-13S	NEW EF19-13B	119.5	EX • EXH19-○-13□□
NEW EF19-18S	NEW EF19-18B	171.5	EX • EXH19-○-18□□
NEW EF19-23S	NEW EF19-23B	224.5	EX • EXH19-○-23□□
NEW EF19-29S	NEW EF19-29B	279.5	EX • EXH19-○-29□□
NEW EF23-15S	NEW EF23-15B	146.5	EX • EXH23-○-15□□
NEW EF23-21S	NEW EF23-21B	206.5	EX • EXH23-○-21□□
NEW EF23-27S	NEW EF23-27B	266.5	EX • EXH23-○-27□□
NEW EF23-33S	NEW EF23-33B	326.5	EX • EXH23-○-33□□

MT-3N

SLIDING NUT for EXH • EXHF



Product no. / Dimensions

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

- Sliding nut can be used on all EXH • EXHF heat-sink top covers, as well as with width 140mm or larger bottom covers.



Application Example

- Double shot injection molded feet with soft and well-designed rounded shape.
- Non-slip design with Elastomer (TPE) pad.
- Available in 3 different color patterns.

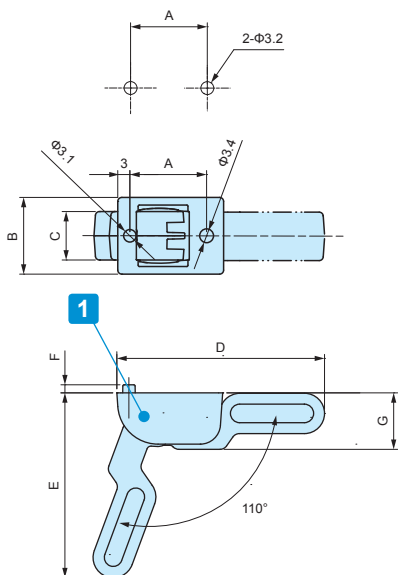
Technical Data
Max load : 7kg

**Components**

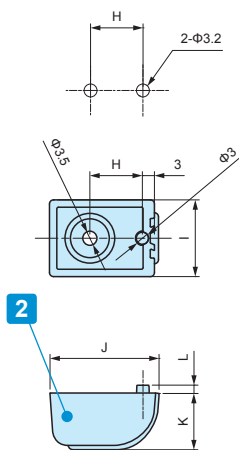
No.	Part name	Pcs	Material	Color / Finish
1	Front feet	2	PC+ABS UL94V-0, TPE	Black & Black • Navy & Gray • Light gray & Gray
2	Rear Feet	2	PC+ABS UL94V-0, TPE	Black & Black • Navy & Gray • Light gray & Gray
-	Washer head screw	4	Steel M3-6	Black Trivalent chromate
-	Nut	4	Steel M3	Black Trivalent chromate

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

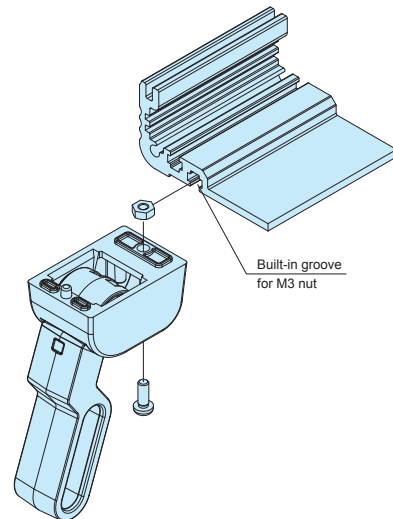
Mounting hole (Front)



Mounting Hole (Rear)



- Possible to install on Built-in groove with M3 nut for all EXP • EXPE • EXW • EX • EXH models with width 185mm or larger bottom covers.
- TLW-70E models are exclusively for width 185mm or larger bottom covers.

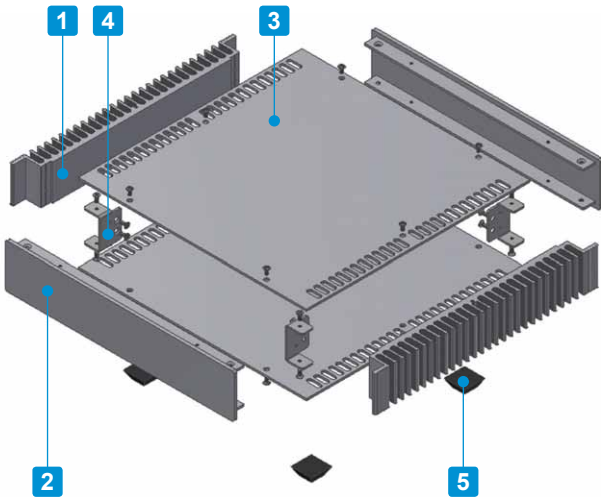


**Product no. / Dimensions**

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



Variations of HY series, HYR and HYRH series are also available. See website for more details.



- Stylish and elegantly designed with a hairline finish.
- Excellent cooling performance with the heat-sink side plates.
- Now available in 56 sizes, and 2 different colors.
- Tough and robust enclosure from using aluminium extrusion parts.
- Simple and easy to assemble construction.
- Flat back heat-sink plates for more effective heat spreading.

Included screws

BB color type

- M3-6 countersunk • Black trivalent chromate x 16 pcs
- M3-5 Slotted raised countersunk • Black trivalent chromate x 12 pcs

SS color type

- M3-6 countersunk • Nickel plated x 16 pcs
- M3-5 Slotted raised countersunk • Nickel plated x 12 pcs

Components

No.	Part name	Pcs	Material	Color / Finish
1	Heat-sink side plate	2	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Panel	2	Extruded aluminium A6063S-T5	Silver • Black / Hairline brushed & Anodized
3	Top • Bottom cover	2	Aluminium A1050P t=2.0	Silver • Black / Hairline brushed & Anodized
4	Corner support	4	Steel SPCC t=1.6	Trivalent chromate
5	Rubber feet	4	Polyurethane	Black

※HL = Hairline brushed

Accessories (Optional parts)



Mounting plate HYC series  
See page HYC • HYCL-1



L-bracket HYCL series  
See page HYC • HYCL-1



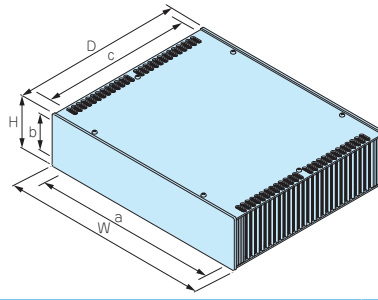
Aluminium isolation feet AFS • AFM series  
See page AFS • AFM-1 ~ 2



TORX screw - for top / bottom cover MR3-5Z series  
See page HY • HYR • HYRH-2



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



Product no.		Dimensions (External)			Dimensions (Internal)			Weight (kg)
● Silver	● Black	W	H	D	a	b	c	
HY 44-23-23SS	HY 44-23-23BB	230	44	231	186	36	225	1.1
HY 44-23-33SS	HY 44-23-33BB	230	44	330	186	36	324	1.6
HY 44-28-23SS	HY 44-28-23BB	280	44	231	196	36	225	1.4
HY 44-28-33SS	HY 44-28-33BB	280	44	330	196	36	324	1.9
HY 44-33-23SS	HY 44-33-23BB	330	44	231	286	36	225	1.5
HY 44-33-33SS	HY 44-33-33BB	330	44	330	286	36	324	2.2
HY 44-43-23SS	HY 44-43-23BB	430	44	231	386	36	225	1.9
HY 44-43-33SS	HY 44-43-33BB	430	44	330	386	36	324	2.6
HY 70-23-23SS	HY 70-23-23BB	230	70	231	186	62	225	1.6
HY 70-23-33SS	HY 70-23-33BB	230	70	330	186	62	324	2.2
HY 70-28-23SS	HY 70-28-23BB	280	70	231	196	62	225	1.8
HY 70-28-33SS	HY 70-28-33BB	280	70	330	196	62	324	2.5
HY 70-33-23SS	HY 70-33-23BB	330	70	231	286	62	225	2.0
HY 70-33-33SS	HY 70-33-33BB	330	70	330	286	62	324	2.8
HY 70-43-23SS	HY 70-43-23BB	430	70	231	386	62	225	2.3
HY 70-43-33SS	HY 70-43-33BB	430	70	330	386	62	324	3.2
HY 88-23-23SS	HY 88-23-23BB	230	88	231	186	80	225	1.9
HY 88-23-33SS	HY 88-23-33BB	230	88	330	186	80	324	2.6
HY 88-28-23SS	HY 88-28-23BB	280	88	231	196	80	225	2.1
HY 88-28-33SS	HY 88-28-33BB	280	88	330	196	80	324	2.8
HY 88-33-23SS	HY 88-33-23BB	330	88	231	286	80	225	2.3
HY 88-33-33SS	HY 88-33-33BB	330	88	330	286	80	324	3.1
HY 88-43-23SS	HY 88-43-23BB	430	88	231	386	80	225	2.7
HY 88-43-33SS	HY 88-43-33BB	430	88	330	386	80	324	3.6
HY 99-23-23SS	HY 99-23-23BB	230	99	231	186	91	225	2.1
HY 99-23-33SS	HY 99-23-33BB	230	99	330	186	91	324	2.7
HY 99-28-23SS	HY 99-28-23BB	280	99	231	196	91	225	2.3
HY 99-28-33SS	HY 99-28-33BB	280	99	330	196	91	324	3.1
HY 99-33-23SS	HY 99-33-23BB	330	99	231	286	91	225	2.5
HY 99-33-33SS	HY 99-33-33BB	330	99	330	286	91	324	3.4
HY 99-43-23SS	HY 99-43-23BB	430	99	231	386	91	225	2.9
HY 99-43-33SS	HY 99-43-33BB	430	99	330	386	91	324	3.9
HY133-23-23SS	HY133-23-23BB	230	132.5	231	186	124.5	225	2.6
HY133-23-33SS	HY133-23-33BB	230	132.5	330	186	124.5	324	3.4
HY133-28-23SS	HY133-28-23BB	280	132.5	231	196	124.5	225	2.8
HY133-28-33SS	HY133-28-33BB	280	132.5	330	196	124.5	324	3.8
HY133-33-23SS	HY133-33-23BB	330	132.5	231	286	124.5	225	3.0
HY133-33-33SS	HY133-33-33BB	330	132.5	330	286	124.5	324	4.1
HY133-43-23SS	HY133-43-23BB	430	132.5	231	386	124.5	225	3.5
HY133-43-33SS	HY133-43-33BB	430	132.5	330	386	124.5	324	4.7
HY149-23-23SS	HY149-23-23BB	230	149	231	186	141	225	2.8
HY149-23-33SS	HY149-23-33BB	230	149	330	186	141	324	3.8
HY149-28-23SS	HY149-28-23BB	280	149	231	196	141	225	3.1
HY149-28-33SS	HY149-28-33BB	280	149	330	196	141	324	4.2
HY149-33-23SS	HY149-33-23BB	330	149	231	286	141	225	3.3
HY149-33-33SS	HY149-33-33BB	330	149	330	286	141	324	4.5
HY149-43-23SS	HY149-43-23BB	430	149	231	386	141	225	3.8
HY149-43-33SS	HY149-43-33BB	430	149	330	386	141	324	5.1
HY177-23-23SS	HY177-23-23BB	230	177	231	186	169	225	3.4
HY177-23-33SS	HY177-23-33BB	230	177	330	186	169	324	4.5
HY177-28-23SS	HY177-28-23BB	280	177	231	196	169	225	3.6
HY177-28-33SS	HY177-28-33BB	280	177	330	196	169	324	4.8
HY177-33-23SS	HY177-33-23BB	330	177	231	286	169	225	3.9
HY177-33-33SS	HY177-33-33BB	330	177	330	286	169	324	5.2
HY177-43-23SS	HY177-43-23BB	430	177	231	386	169	225	4.5
HY177-43-33SS	HY177-43-33BB	430	177	330	386	169	324	5.8



# HY SERIES APPLICATION EXAMPLE

## COMPLETE BALANCED SPECIAL TUNED DC HEADPHONE AMPLIFIER

Product by Sanyo Kasei (Japan)



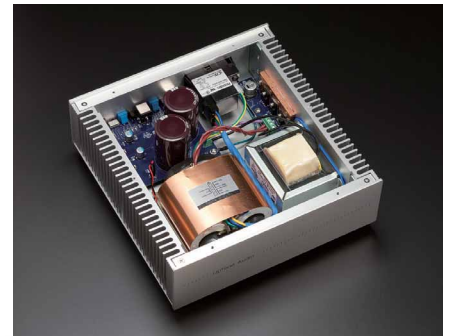
## ENERGY CREATION POWER CONDITIONER DEVELOPMENT KIT

Product by Smart Energy Laboratory (Japan)



## LINEAR POWER SUPPLY

Product by UpTone Audio (USA)



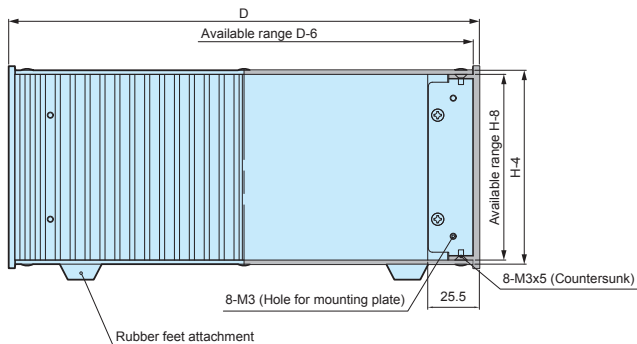
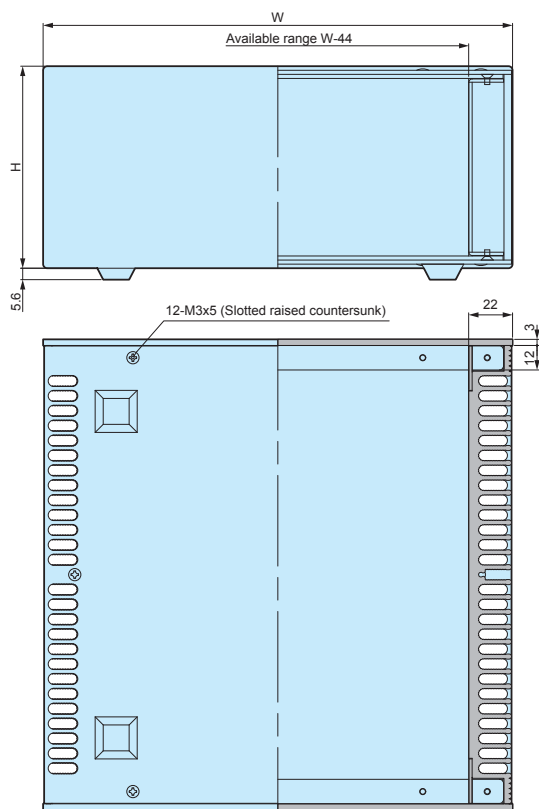
## INDUSTRIAL FANLESS COMPUTER

Product by Techno Veins (Japan)





**HY dimensions (outside view)**



Included screws

BB Color type

M3-6 countersunk screw, black trivalent chromate x 16 pcs

M3-5 Slotted raised countersunk screw, black trivalent chromate x 12 pcs

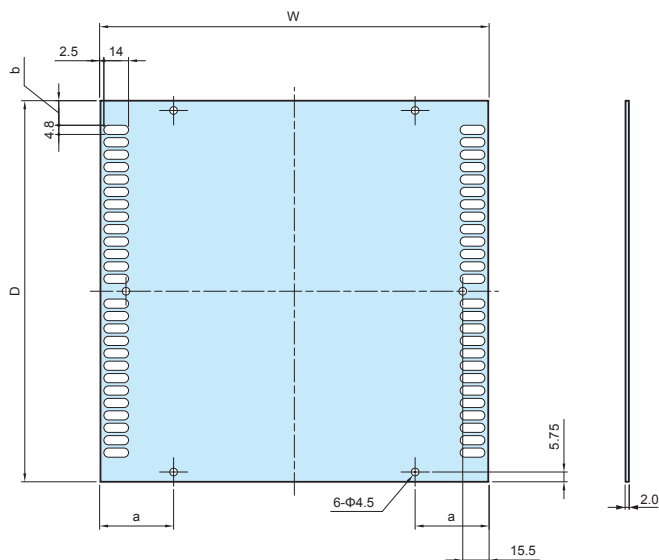
SS Color type

M3-6 countersunk screw, nickel plated x 16 pcs

M3-5 Slotted raised countersunk screw, nickel plated x 12 pcs

**Component Parts Drawings**

**HY • HYR • HYRH top / bottom cover**



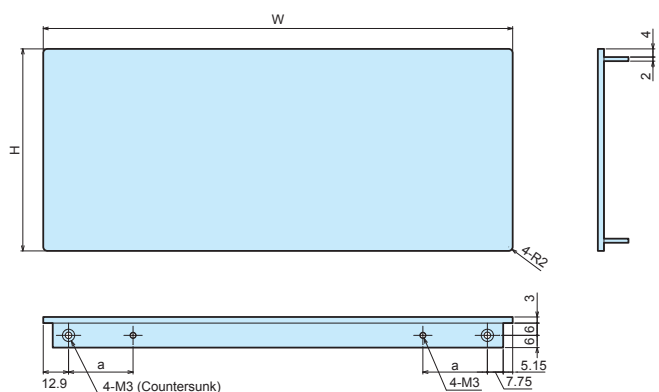
**Color Type**

Code	Material	Color / Finish
SS	Aluminium A1050P t = 2.0	Silver / Hairline brushed & Anodized
BB	Aluminium A1050P t = 2.0	Black / Hairline brushed & Anodized

**Dimensions**

Enclosure W x D	W	D	a	b
230 × 231	229	224.5	45.7	14.95
230 × 330	229	323.5	45.7	15.1
280 × 231	279	224.5	55.8	14.95
280 × 330	279	323.5	55.8	15.1
330 × 231	329	224.5	65.8	14.95
330 × 330	329	323.5	65.8	15.1
430 × 231	429	224.5	85.8	14.95
430 × 330	429	323.5	85.8	15.1

**HY front / rear panels & HYR • HYRH rear panel**



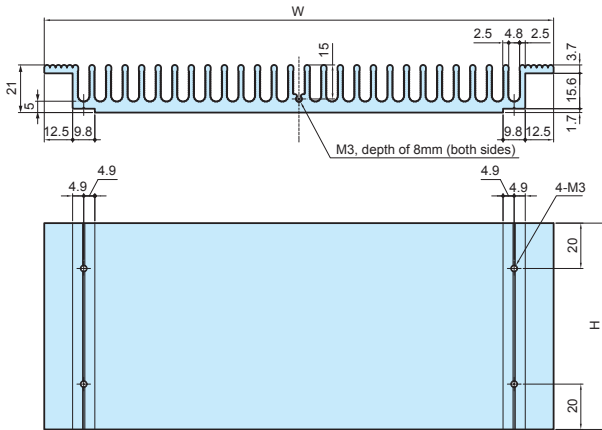
**Color Type**

Code	Material	Color / Finish
SS	Extruded aluminium A6063S-T5	Silver / Hairline brushed & Anodized
BB	Extruded aluminium A6063S-T5	Black / Hairline brushed & Anodized

**Dimensions**

Enclosure W	W	a	H(44)	H(70)	H(88)	H(99)	H(132.5)	H(149)	H(177)
230	230	33.3	44	70	88	99	132.5	149	177
280	280	43.4	44	70	88	99	132.5	149	177
330	330	53.4	44	70	88	99	132.5	149	177
430	430	73.4	44	70	88	99	132.5	149	177

HY • HYR • HYRH heat-sink side plate



Color Type

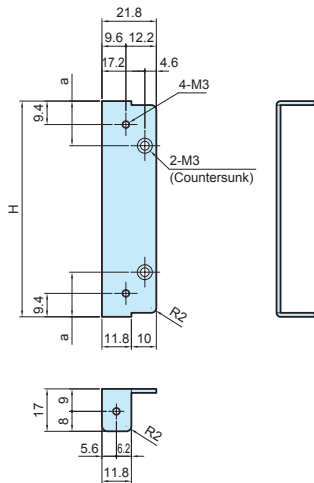
Code	Material	Color / Finish
SS	Extruded aluminium A6063S-T5	Silver / Anodized
BB	Extruded aluminium A6063S-T5	Black / Anodized

Dimensions

Enclosure D x H	W	H	Thermal resistance (°C/W)
231 × 44	224.6	36	2.41
330 × 44	323.6	36	1.89
231 × 70	224.6	62	1.49
330 × 70	323.6	62	1.36
231 × 88	224.6	80	1.49
330 × 88	323.6	80	1.17
231 × 99	224.6	91	1.38
330 × 99	323.6	91	1.08
231 × 132.5	224.6	124.5	1.14
330 × 132.5	323.6	124.5	0.89
231 × 149	224.6	141	1.06
330 × 149	323.6	141	0.83
231 × 177	224.6	169	0.95
330 × 177	323.6	169	0.74

■ Thermal resistance calculation is based on the fins being perpendicular to the ground with temperature at 60°C.

HY • HYR • HYRH corner support



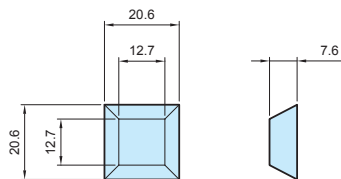
Part Information

Part name	Material	Finish
Corner support	Steel t=1.6	Trivalent chromate

Dimensions

Enclosure H	H	a
44	31.8	10.9
70	57.8	17.9
88	75.8	17.9
99	86.8	17.9
132.5	120.3	17.9
149	136.8	17.9
177	164.8	17.9

HY • HYR • HYRH rubber feet



Part Information

Part name	Material	Color
Rubber feet	Polyurethane	Black

Accessories (Optional parts)

MR SERIES

SLOTTED RAISED COUNTERSUNK TORX SCREW



- For use with top/bottom cover.
- Recommended for aesthetic purposes, or for tampering resistance.
- Requires the use of a specialized screwdriver.

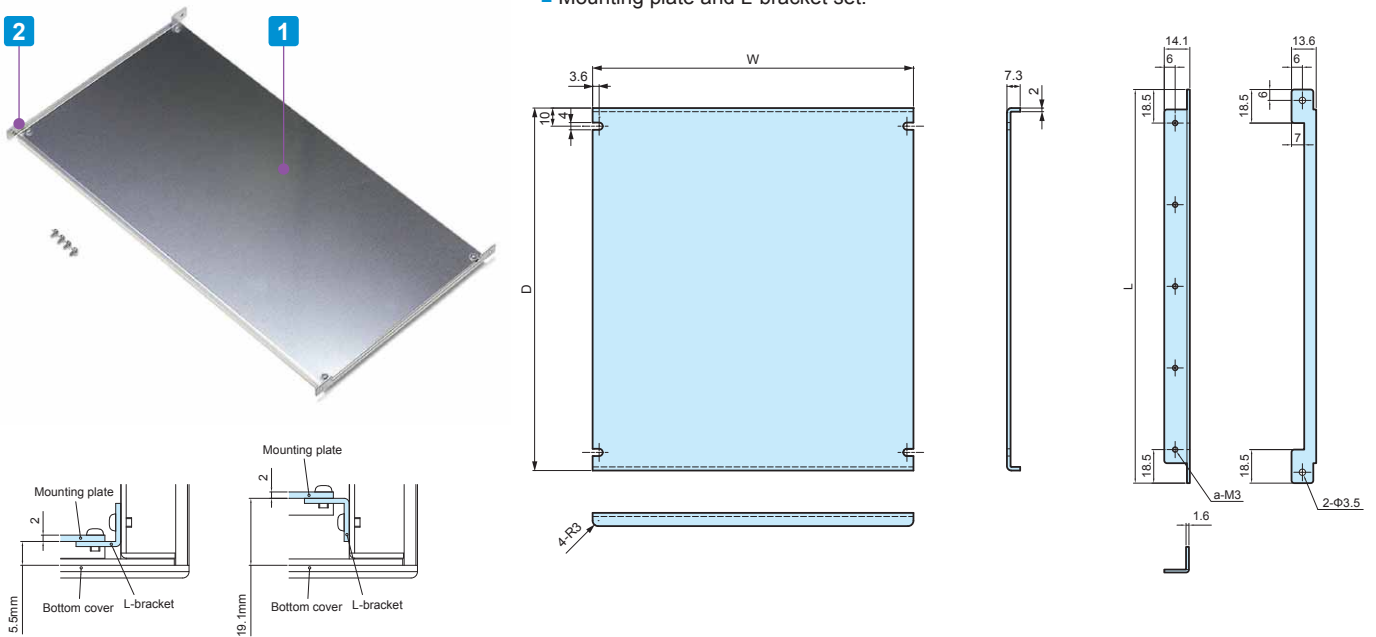
Product no. / Dimensions

Product no.	M	L	TORX head no.	Material	Color / Finish	Pack of
MR3-5ZS	3	5	T10	Steel	Nickel plated	20
MR3-5ZB	3	5	T10	Steel	Black trivalent chromate	20

**HYC SERIES**

**MOUNTING PLATE for HY · HYR · HYRH**

■ Mounting plate and L-bracket set.



**Components**

No.	Part name	Pcs	Material	Color / Finish
1	Mounting plate	1	Aluminium A1050P t=2.0	Unfinished
2	L-bracket	2	Steel SPCC t=1.6	Tivalent chromate
?	Screw	1 set	Steel M3	Tivalent chromate

**Product no. / Dimensions**

Product no.	W	D	L	a	Suitable models	Weight (g)
HYC23-23	177	200	217	5	HY□-23-23	300
HYC23-28	227	200	217	5	HY□-28-23	350
HYC23-33	277	200	217	5	HY□-33-23	410
HYC23-43	377	200	217	5	HY□-43-23	520
HYC33-23	177	299	316	7	HY□-23-33	450
HYC33-28	227	299	316	7	HY□-28-33	550
HYC33-33	277	299	316	7	HY□-33-33	710
HYC33-43	377	299	316	7	HY□-43-33	800

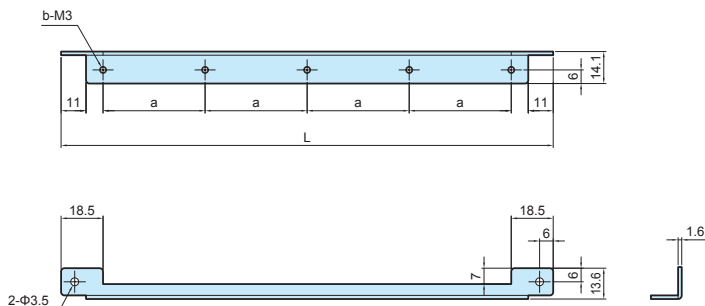


Clinching stud customization service available.

**HYCL SERIES**

**L-bracket for HY · HYR · HYRH**

- Simple L-bracket and screw set.
- Use with your original mounting plate or PCB.



**Components**

No.	Part name	Material	Color / Finish
1	L-bracket	Steel t=1.6	Tivalent chromate
2	Screw	Steel M3	Tivalent chromate

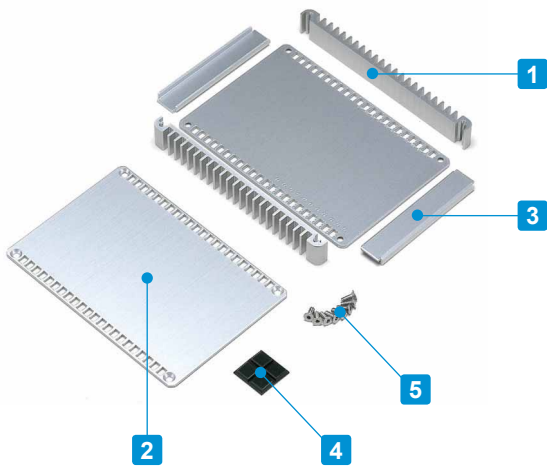
**Product no. / Dimensions**

Product no.	L	a	b	Pack of
HYCL-23	217	45	5	2
HYCL-33	316	46.5	7	2



- Heat dissipation and cooling via the utilization of extruded aluminium heat-sink side plates.
- Rounded corners gives it an elegant feel.
- Aluminium extrusion parts provides high structural durability.
- Suitable for use as small-type fanless PC, digital audio equipment, and so on.
- Available in both Silver and Black color types.

- Optional aluminium isolation feet, AFS and AFM series are available. See page AFS•AFM-1 ~ AFS•AFM-2 for more details.



Application example



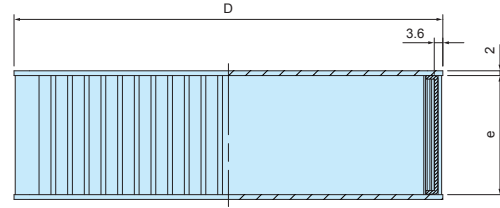
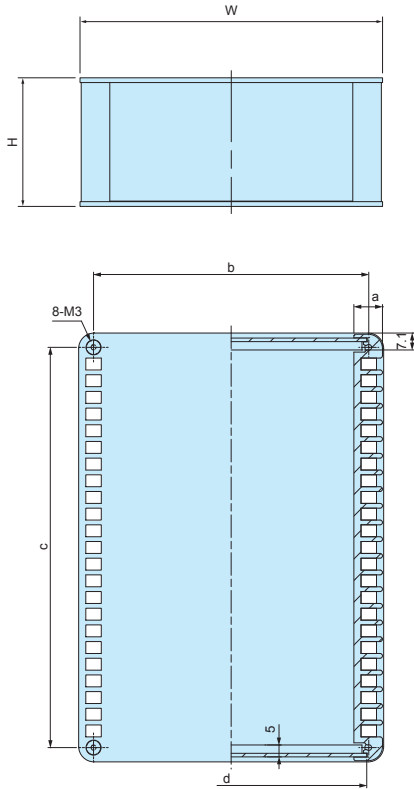
Included screws  
 Enclosure (Silver) M3-8 Hexagonal countersunk : Stainless steel : Unfinished x 8 pcs  
 Enclosure (Black) M3-8 Hexagonal countersunk : Steel : Black trivalent chromate x 8 pcs  
 ※Hexagonal wrench included

Components

No.	Part name	Pcs	Material	Color / Finish
1	Heat-sink side plate	2	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Top • Bottom cover	2	Aluminium A1050P t=2.0	Silver • Black / Hairline brushed & Anodized
3	Front • Rear panel	2	Aluminium A1050P t=1.5	Silver • Black / Hairline brushed & Anodized
4	Rubber feet	1 set	Polyurethane	Black
5	Screw	8	Stainless steel (SS color type) Steel (BB color type)	Unfinished Black trivalent chromate (Steel)

HIT dimensions

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



APPLICATION EXAMPLE

FIBER OPTICS EXTENSION UNIT

Product by Sanritz Automation (Japan)



AUDIO POWER SUPPLY for MacBook

Product by AY-densi (Japan)



Product no. / Dimensions

■ Thermal resistance calculation is based on the fins being perpendicular to the ground with temperature at 60°C.

Product no.		W	H	D	a	b	c	d	e	※ Thermal resistance rate (°C/W)	Weight (g)
● Silver	● Black										
HIT 9-2-13SS	HIT 9-2-13BB	89	20	130	8	81	118.6	78.8	16	9.14	183
HIT 9-4-13SS	HIT 9-4-13BB	89	40	130	8	81	118.6	78.8	36	5.6	255
HIT13-3-13SS	HIT13-3-13BB	130	30	130	8	122	118.6	119.8	26	6.82	289
HIT13-5-13SS	HIT13-5-13BB	130	50	130	8	122	118.6	119.8	46	4.83	370
HIT18-4-13SS	HIT18-4-13BB	180	40	130	8	172	118.6	169.8	36	5.6	414
HIT18-6-13SS	HIT18-6-13BB	180	60	130	8	172	118.6	169.8	56	4.29	503
HIT13-3-18SS	HIT13-3-18BB	128	30	180	12	115.5	168	113.8	26	4.38	411
HIT13-5-18SS	HIT13-5-18BB	128	50	180	12	115.5	168	113.8	46	3.1	535
HIT17-4-18SS	HIT17-4-18BB	174	40	180	12	161.5	168	159.8	36	3.6	578
HIT17-6-18SS	HIT17-6-18BB	174	60	180	12	161.5	168	159.8	56	2.76	719
HIT23-5-18SS	HIT23-5-18BB	228	50	180	12	215.5	168	213.8	46	3.1	772
HIT23-7-18SS	HIT23-7-18BB	228	70	180	12	215.5	168	213.8	66	2.5	928





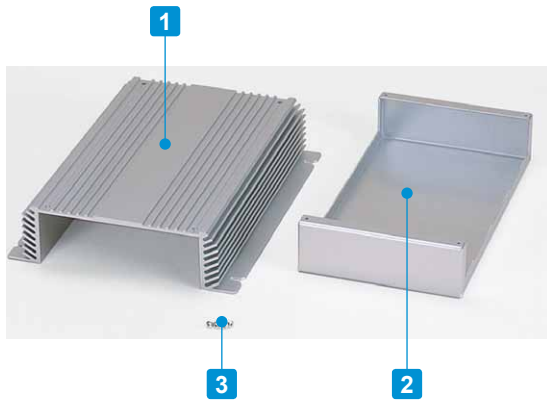
Heat Resistant



- Aluminium case with heat dissipating heat-sink cover for superior cooling effect.
- Recommended for use with equipment requiring heat dissipation.
- Manufactured with mounting flange for easy attachment onto walls and other surfaces.

**APPLICATION EXAMPLE**

**HIGH-END PERFORMANCE AUDIO AMPLIFIER**

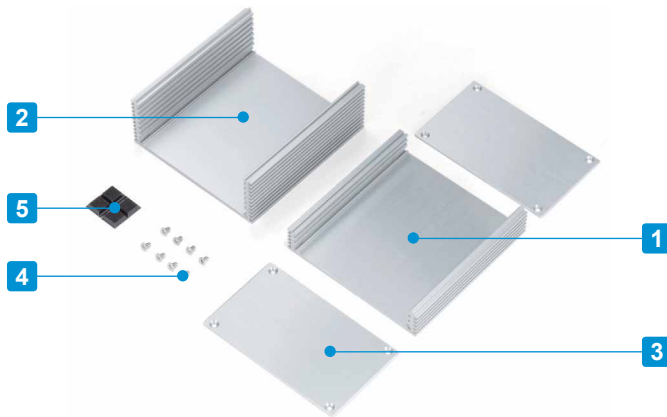


Product by: IC Technologies (Australia)

**Components**

No.	Part name	Pcs	Material	Color / Finish
1	Heat-sink cover	1	Extruded aluminium A6063S-T5	Silver • Black / Anodized
2	Bottom chassis	1	Aluminium A1050P t=1.5	Silver • Black / Anodized
3	Screw	4	Steel M3-5	Nickel plated • Black trivalent chromate





- Stylish design coupled with hairline brushed finish makes for a luxurious high-end case.
- Heat dissipation and cooling via the utilization of extruded aluminium heat-sink top/bottom cover.
- Available in 18 sizes.
- Sturdy extruded case construction.

Included screws  
 Enclosure (Silver) M3-6 countersunk : Steel : Nickel plated x 8 pcs  
 Enclosure (Black) M3-6 countersunk : Steel : Black trivalent chromate x 8 pcs

**Components**

No.	Part name	Pcs	Material	Color / Finish
1	Top cover	1	Extruded aluminium A6063S-T5	Silver • Black / Hairline brushed & Anodized
2	Bottom cover	1	Extruded aluminium A6063S-T5	Silver • Black / Hairline brushed & Anodized
3	Front • Rear panel	2	Aluminium A1050P t=2.0	Silver • Black / Hairline brushed & Anodized
4	Screw	8	Steel countersunk M3-6	Nickel plated • Black trivalent chromate
5	Rubber feet	4	Polyurethane	Black

※HL = Hairline brushed

**Accessories (Optional parts)**



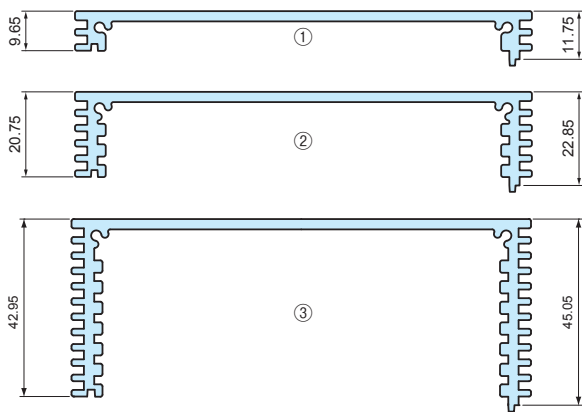
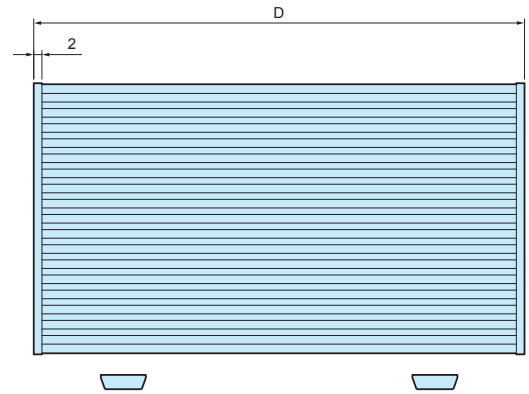
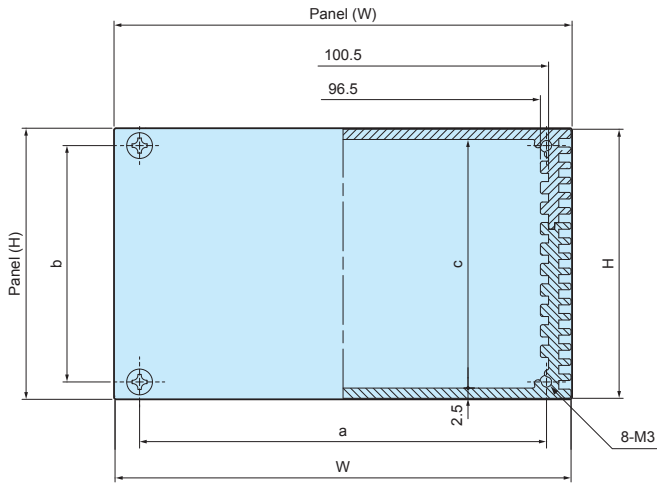
TORX screw MR-2S  
 See page EM•MR-1



Aluminium isolation feet AFS • AFM series  
 See page AFS•AFM-1 ~ AFS•AFM-2

**HEN dimensions**

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



**Cover Type**

Cover	Cover length (D-4)	※ Thermal resistance rate (°C/W)
①	56	6.7
	116	3.6
	196	2.1
②	56	5
	116	2.6
	196	1.5
③	56	3.3
	116	1.7
	196	0.93

■ Thermal resistance calculation is based on the fins being perpendicular to the ground with temperature at 60°C.

**Product no. / Dimensions**

Product no.		W	H	D	Panel (W)	Panel (H)	a	b	c	Cover combination	Weight (g)
● Silver	● Black										
HEN110206S	HEN110206B	111.2	21.4	60	112	21.9	99.2	13.4	16.4	①×2	143
HEN110212S	HEN110212B	111.2	21.4	120	112	21.9	99.2	13.4	16.4		258
HEN110220S	HEN110220B	111.2	21.4	200	112	21.9	99.2	13.4	16.4		411
HEN110306S	HEN110306B	111.2	32.5	60	112	33.0	99.2	24.5	27.5	①×1 ②×1	179
HEN110312S	HEN110312B	111.2	32.5	120	112	33.0	99.2	24.5	27.5		311
HEN110320S	HEN110320B	111.2	32.5	200	112	33.0	99.2	24.5	27.5		488
HEN110406S	HEN110406B	111.2	43.6	60	112	44.1	99.2	35.6	38.6	②×2	215
HEN110412S	HEN110412B	111.2	43.6	120	112	44.1	99.2	35.6	38.6		365
HEN110420S	HEN110420B	111.2	43.6	200	112	44.1	99.2	35.6	38.6		565
HEN110506S	HEN110506B	111.2	54.7	60	112	55.2	99.2	46.7	49.7	①×1 ③×1	250
HEN110512S	HEN110512B	111.2	54.7	120	112	55.2	99.2	46.7	49.7		417
HEN110520S	HEN110520B	111.2	54.7	200	112	55.2	99.2	46.7	49.7		640
HEN110606S	HEN110606B	111.2	65.8	60	112	66.3	99.2	57.8	60.8	②×1 ③×1	286
HEN110612S	HEN110612B	111.2	65.8	120	112	66.3	99.2	57.8	60.8		471
HEN110620S	HEN110620B	111.2	65.8	200	112	66.3	99.2	57.8	60.8		717
HEN110806S	HEN110806B	111.2	88.0	60	112	88.5	99.2	80.8	83.0	③×2	358
HEN110812S	HEN110812B	111.2	88.0	120	112	88.5	99.2	80.8	83.0		577
HEN110820S	HEN110820B	111.2	88.0	200	112	88.5	99.2	80.8	83.0		869

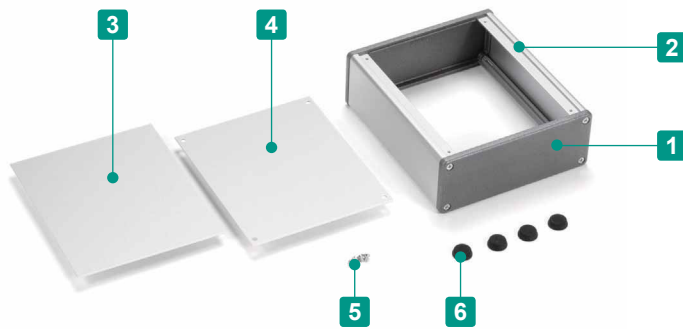
**APPLICATION EXAMPLE AUDIO POWER SUPPLY**

Product by AY-densi (Japan)



# CH SERIES

# ALUMINIUM CONTROL BOX



- Simple and strong construction with diecast and extruded aluminium material.
- Durable powder-coated side plate.
- Both the slide and screwed panel can be utilized as the front panel.
- 2 color types available.

### Components

No.	Part name	Pcs	Material	Color / Finish
1	Side plate	2	Diecast aluminium ADC12	Black • Metallic gray / Powder coated
2	Frame	2	Extruded aluminium A6063S-T5	Black / Anodized • Silver / Hairline brushed & Anodized
3	Slide panel	1	Aluminium A1100P • A1050P	Black / Painted • Silver / Hairline brushed & Anodized
4	Screwed panel	1	Aluminium A1100P • A1050P	Black / Painted • Silver / Hairline brushed & Anodized
5	Screw	1 set	Steel	Black trivalent chromate • Nickel plated
6	Rubber feet	4	Synthetic rubber	Black

■ Note: panels are covered with a protective film on one side. Remove before assembly.

※CH7 models come with copper plated screws for grounding.

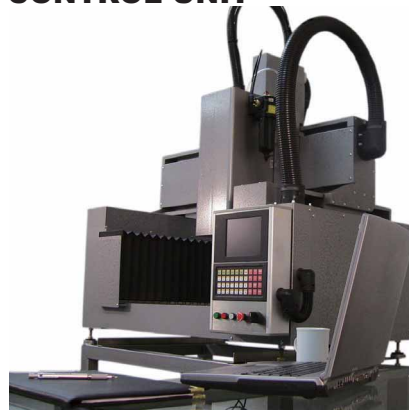
## APPLICATION EXAMPLE

### WAVEFORM ANALYZER



Product by Graviton Inc. (Japan)

### CNC MACHINING CENTER CONTROL UNIT



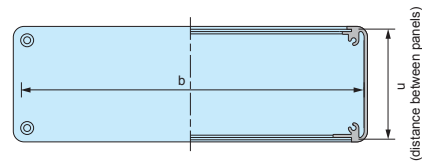
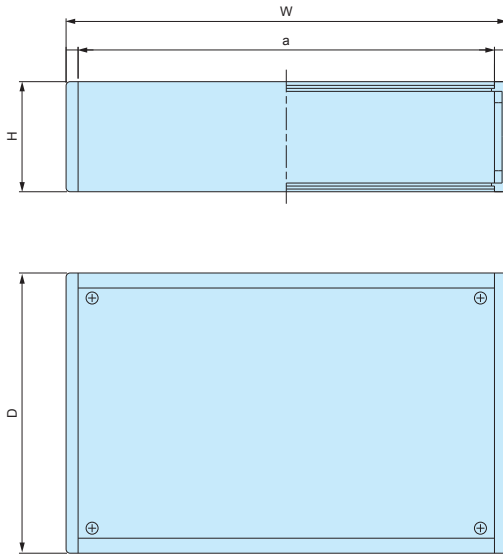
Product by FNS Co. Ltd. (Japan)





CH dimensions

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



Included screws

- CH4 • CH6 models  
 M3-5 Slotted raised countersunk • Black trivalent chromate x 4 pcs  
 M3-5 Slotted raised countersunk • Nickel plated x 4 pcs  
 M3-10 countersunk • Black trivalent chromate x 8 pcs  
 M3-10 countersunk • Nickel plated x 8 pcs
- CH7 • CH8 models  
 M3-5 Slotted raised countersunk • Black trivalent chromate x 4 pcs  
 M3-5 Slotted raised countersunk • Nickel plated x 4 pcs  
 M4-12 countersunk • Black trivalent chromate x 8 pcs  
 M4-12 countersunk • Nickel plated x 8 pcs

Product no. / Dimensions

Product no.		W	H	D	a	b	u	Weight (kg)
● Black (BBP)	● Gray-Silver(GSP)							
CH4- 7-10BBP	CH4- 7-10GSP	70	36.5	100.5	60	96.4	30.5	0.15
CH4-10-10BBP	CH4-10-10GSP	100	36.5	100.5	90	96.4	30.5	0.20
CH4-15-10BBP	CH4-15-10GSP	150	36.5	100.5	140	96.4	30.5	0.27
CH4-20-10BBP	CH4-20-10GSP	200	36.5	100.5	190	96.4	30.5	0.35
CH4-25-10BBP	CH4-25-10GSP	250	36.5	100.5	240	96.4	30.5	0.42
CH6- 8-14BBP	CH6- 8-14GSP	80	55	140.7	68	135.7	48.8	0.25
CH6-11-14BBP	CH6-11-14GSP	110	55	140.7	98	135.7	48.8	0.31
CH6-16-14BBP	CH6-16-14GSP	160	55	140.7	148	135.7	48.8	0.41
CH6-22-14BBP	CH6-22-14GSP	220	55	140.7	208	135.7	48.8	0.53
CH6-29-14BBP	CH6-29-14GSP	290	55	140.7	278	135.7	48.8	0.67

Product no.		W	H	D	a	b	u	Weight (kg)
● Black (BBP)	● Gray-Silver(GSP)							
CH7- 9-17BBP	CH7- 9-17GSP	90	65.5	168.5	74	164.4	58	0.50
CH7-12-17BBP	CH7-12-17GSP	120	65.5	168.5	104	164.4	58	0.58
CH7-17-17BBP	CH7-17-17GSP	170	65.5	168.5	154	164.4	58	0.72
CH7-25-17BBP	CH7-25-17GSP	250	65.5	168.5	234	164.4	58	0.94
CH7-33-17BBP	CH7-33-17GSP	330	65.5	168.5	314	164.4	58	1.16
CH8-15-23BBP	CH8-15-23GSP	150	75	230.6	134	226.1	68.8	0.74
CH8-25-23BBP	CH8-25-23GSP	250	75	230.6	234	226.1	68.8	1.06
CH8-33-23BBP	CH8-33-23GSP	330	75	230.6	314	226.1	68.8	1.31
CH8-43-23BBP	CH8-43-23GSP	430	75	230.6	414	226.1	68.8	1.63

Accessories (Optional parts)

MR SERIES

TORX SCREW



- Material / Finish : Steel / Nickel plated
- TORX screw set for 1 unit.
- Recommended for aesthetic purposes, or for tamper-resistance.
- Requires the use of a specialized screwdriver.

Suitable Enclosures

Product no.	Suitable enclosures
MR-3CS	CH4 and CH6 models
MR-4CS	CH7 and CH8 models

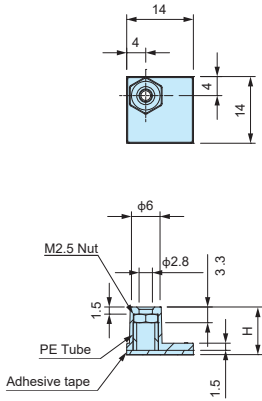
Product no. / Dimensions

Product no.	Included screws	TORX head no.
MR-3CS	M3-10 countersunk x 8 pcs • M3-5 Slotted raised countersunk x 4 pcs	T10 (M3)
MR-4CS	M4-12 countersunk x 8 pcs • M3-5 Slotted raised countersunk x 4 pcs	T10 (M3) • T20 (M4)

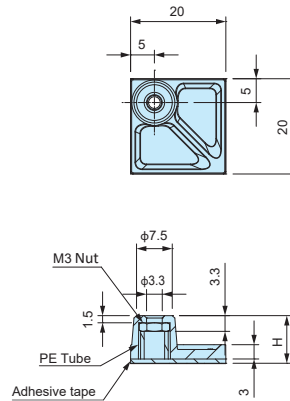


- Double -sided adhesive tape allows the standoff to be mounted quickly and easily; allows PCB mounting in non-boss enclosures.
- Convenient for installing PCBs into enclosures without the need for customization.
- Please ensure that surface is cleaned and grease-free before adhering.
- Once removed,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

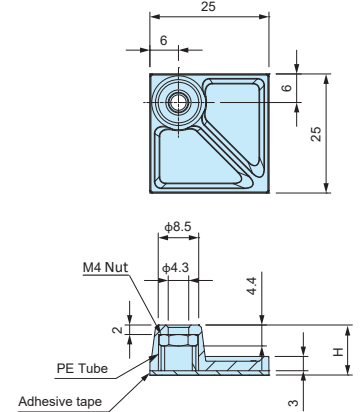
AST2.5-□



AST3-□



AST4-□



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

Product no. / Dimensions

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

Product no.	H dimension	Included screw	Recommended PCB Thickness (mm)	Recommended torque (N • m)	Weight (g)	Pack of
AST2.5-5B	5	M2.5-5 panhead	1.0~2.0	0.3	0.6	4
AST2.5-10B	10	M2.5-5 panhead	1.0~2.0	0.3	0.8	4
AST3-6B	6	M3-6 panhead	1.0~3.0	0.4	1.5	4
AST3-10B	10	M3-6 panhead	1.0~3.0	0.4	1.6	4
AST3-15B	15	M3-6 panhead	1.0~3.0	0.4	1.8	4
AST3-20B	20	M3-6 panhead	1.0~3.0	0.4	2.1	4
AST4-10.5B	10.5	M4-8 panhead	1.0~3.5	0.8	2.6	4
AST4-20B	20	M4-8 panhead	1.0~3.5	0.8	3.2	4
AST2.5-5B-P	5	None	—	0.3	0.6	100
AST2.5-10B-P	10	None	—	0.3	0.8	100
AST3-6B-P	6	None	—	0.4	1.5	100
AST3-10B-P	10	None	—	0.4	1.6	100
AST3-15B-P	15	None	—	0.4	1.8	100
AST3-20B-P	20	None	—	0.4	2.1	100
AST4-10.5B-P	10.5	None	—	0.8	2.6	50
AST4-20B-P	20	None	—	0.8	3.2	50

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[www.takachi-enclosure.com](http://www.takachi-enclosure.com)  
[sales@takachi-el.co.jp](mailto:sales@takachi-el.co.jp)

● All items listed in this catalogue are compliant with EU RoHS 10 standard.

NEW PRODUCT Vol.1 2020.7

AFS•AFM SERIES

ALUMINIUM ISOLATION FEET



- The surface treatment and finish allows the feet to exhibit a polished and luxurious feel.
- Non-slip NBR O-ring is present on the underside of the feet.
- Suitable for use in audio devices.

### Available in both internal and external screw installation type.

#### External type / Shot blast finish (AFS series)



The external type is secured via screws from the underside / base of the feet to the enclosure. A thread hole is required for direct securing, while a circular hole is required for lock nut securing.

The shot blast finish provides a high quality surface finish look, and pairing well with various types of enclosure surfaces.

Available in both silver and black.

#### Internal type / Reflective finish (AFM series)



The internal type is secured via screws from the inside of the enclosure. A circular hole is required for securing into the pre-made threads in the top-side of the feet.

The reflective surface finish adds a high quality touch to the unit, allow it to have a luxurious look.

Available only in Silver.

Accessories (Optional parts)

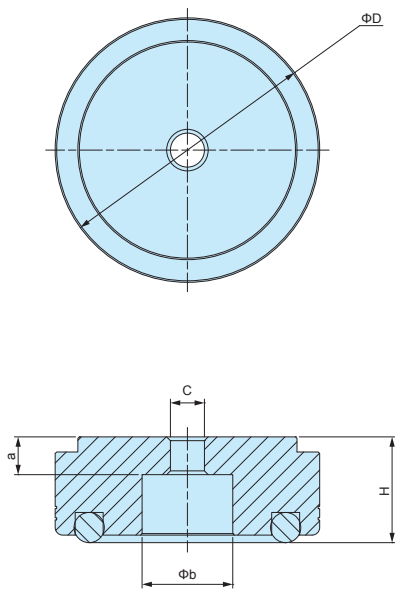
Product no. / Dimensions

Product no.		D	H	Installation type	C	a	b	Pack of
● Silver	● Black							
AFS20- 8S	AFS20- 8B	20	8	Internal	Φ3.4	3	9	4
AFS25-10S	AFS25-10B	25	10	Internal	Φ4.5	4	12	4
AFS30-12S	AFS30-12B	30	12	Internal	Φ4.5	5	12	4
AFS35-14S	AFS35-14B	35	14	Internal	Φ4.5	5	12	4
AFS39-16S	AFS39-16B	39	16	Internal	Φ4.5	5	15	4
AFS44-18S	AFS44-18B	44	18	Internal	Φ4.5	5	20	4
AFS55-20S	AFS55-20B	55	20	Internal	Φ5.5	5	20	4
AFM15- 7S	-	15	7	External	M3	4	-	4
AFM20- 9S	-	20	9	External	M3	5	-	4
AFM25-12S	-	25	12	External	M4	7	-	4
AFM30-14S	-	30	14	External	M4	8	-	4
AFM35-16S	-	35	16	External	M4	10	-	4
AFM39-18S	-	39	18	External	M4	10	-	4
AFM44-20S	-	44	20	External	M4	10	-	4
AFM55-22S	-	55	22	External	M5	15	-	4

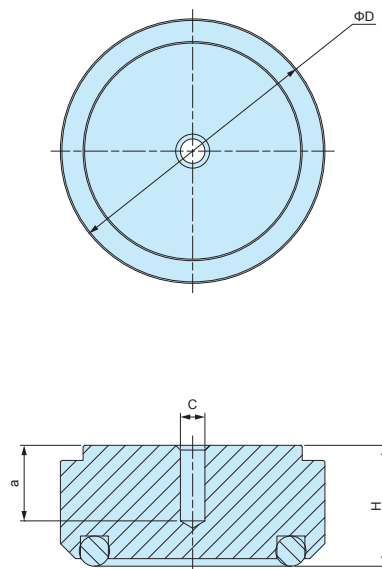
AFS • AFM dimensions

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

AFS SERIES



AFM SERIES



APPLICATION EXAMPLE

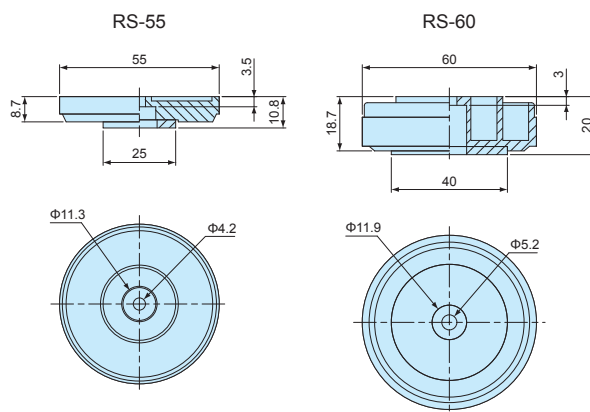
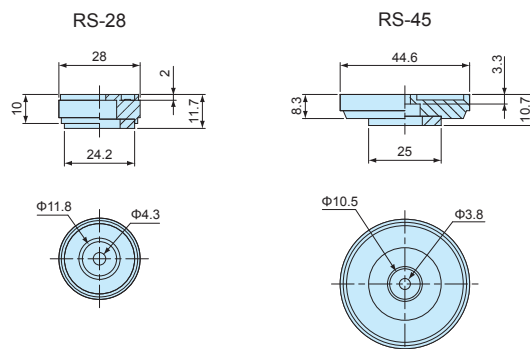


RS SERIES

PLATED PLASTIC FEET



- Suitable for audio equipment use.
- Elastomeric foam pad can be found at the underside of the feet.



Product no. / Dimensions

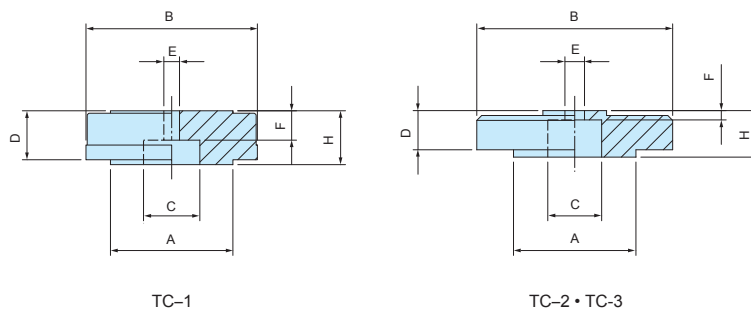
Product no.		Material	Pack of
● Silver	● Gold		
RS-28S	RS-28G	ABS UL94HB / Polyester / EVA	4
RS-45S	RS-45G	ABS UL94HB / Polyester / EVA	4
RS-55S	RS-55G	ABS UL94HB / Polyester / EVA	4
RS-60S	RS-60G	ABS UL94HB / Polyester / EVA	4

TC SERIES

ALUMINIUM FEET



- Aluminium material gives it a refined and elegant look.
- Suitable for audio equipment use.
- Elastomeric foam pad can be found on the underside of the feet.



Product no. / Dimensions

Product no.		A	B	C	D	E	F	H	Material	Pack of
● Silver	● Gold									
TC-1S	TC-1G	25	35	11.5	9.7	3.4	5.6	11.5	ABS UL94HB / Aluminium / EVA	4
TC-2S	TC-2G	25	40	11	10.2	4.1	2.1	12	ABS UL94HB / Aluminium / EVA	4
TC-3S	TC-3G	25	45	11.7	12	4.2	7.5	15	ABS UL94HB / Aluminium / EVA	4

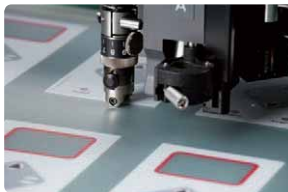


# DIGITAL PRINTED OVERLAY



## 3 reasons for low initial costs

Reason 1



**Cutting process**



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

Reason 2

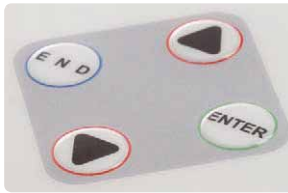


**Printing process**



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

Reason 3



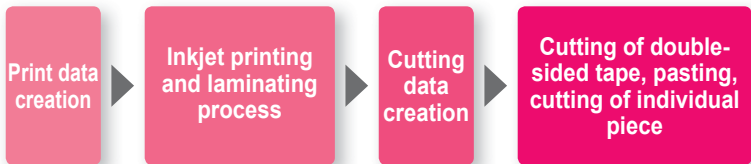
**Embossing process**



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

## Comparison of current and previous manufacturing methods

Current



Previous



# PRODUCTION PROCESS



1. Inkjet printing on film



2. Laminating



3. Cutting double-sided tape



4. Sticking double-sided tape on printed film



5. Cutting the sheet to size



6. Embossing



7. Machining on enclosure



8. Sticking overlay sheet onto enclosure



9. Complete

# CUSTOMIZATION EXAMPLE

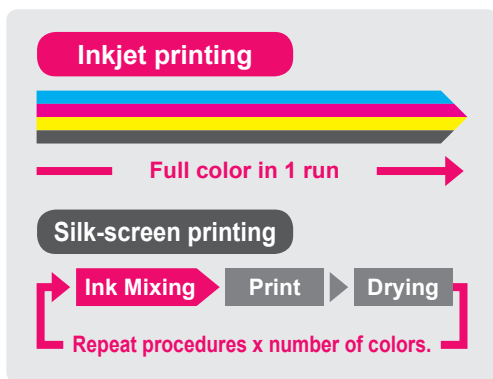




# INKJET PRINTING



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



**Low printing cost**  
Full color print possible in small quantities

**Inkjet printing** 1 run only for full color print

Printing cost Full color

**Silk-screen printing** Printing cost x number of colors

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

# High quality printing of photo image and color gradation.

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

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



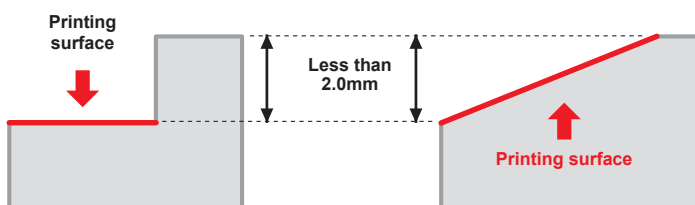
## Maximum printable enclosure size



## Printable on surfaces with height differential

Printing is possible on recessed, sloped and rounded sections.

Gap difference is less than 2.0mm.



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



Printed example





# CNC MACHINING

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



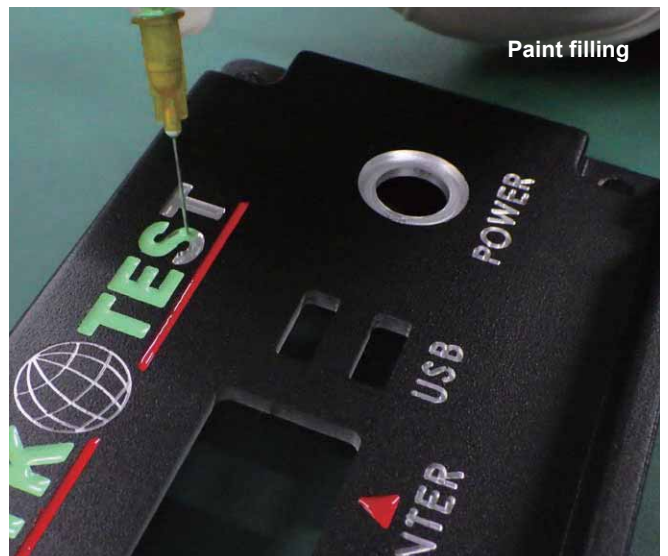
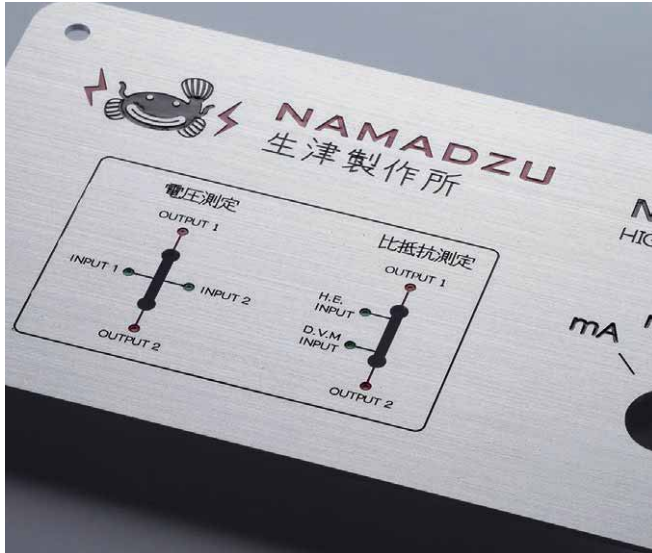
- Mainly used for plastic, aluminium die-cast, and aluminium extrusion material types.
- Able to perform milling for various shapes and sizes.
- Recommended for small quantity customization.





# ENGRAVING

By having the drill-head slightly milling the surface, the engraving of fine text or complex designs is able to be performed on a variety of surfaces, be it flat, curved, and so on. Suitable for small batch print, and/or simple lettering. Font shall be similar to VAG Rounded font type.



# LASER CUTTING

Laser cutting utilizes a laser to perform cutting on an object, allowing various types and shapes of holes to be cut.

New fiber laser machine allows the processing of aluminium sheets with both high precision and speed. Processing of Pure Aluminium 1050 is also possible with minimal burr as compared to conventional CO<sup>2</sup> laser machines, which causes excessive burring.



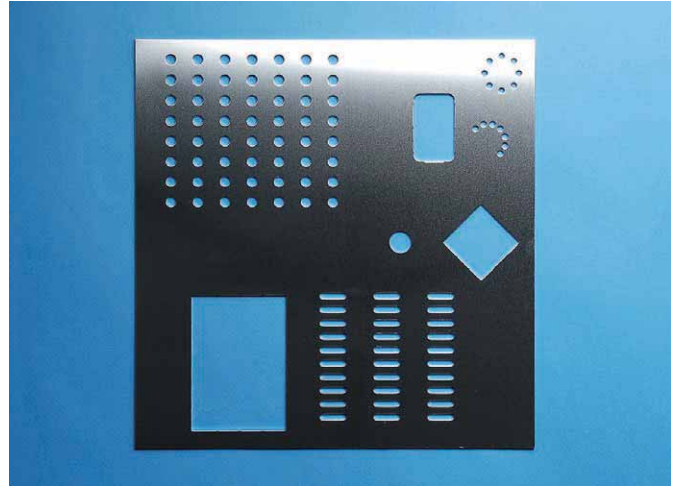
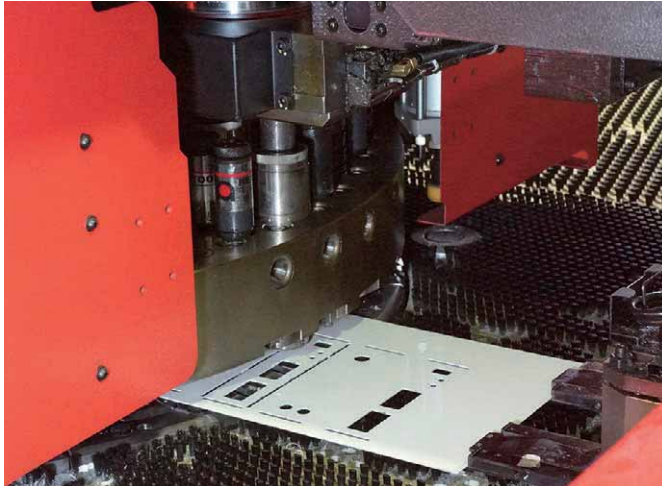


# PUNCHING PRESS

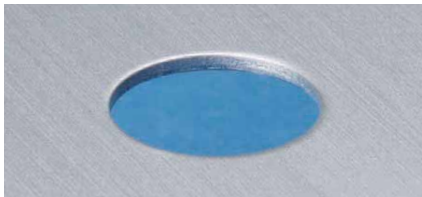
What is punching press? It is a type of machine press used to cut holes in material via the use of various sized die sets.

Punching press allows the realization of high cost performance due to its high speed automated turret punching process, which significantly reduces machining lead-time.

Due to its ability to create designated sized holes by means of rapid multiple hole punches, this enables it to punch holes of various sizes and types quickly and efficiently.

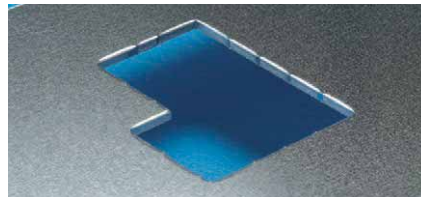


## Circular hole



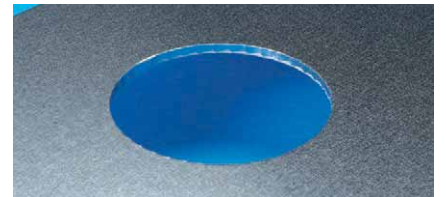
Circular holes as small as 1.0mm in diameter can be punched.

## Nibbling press (rectangle)



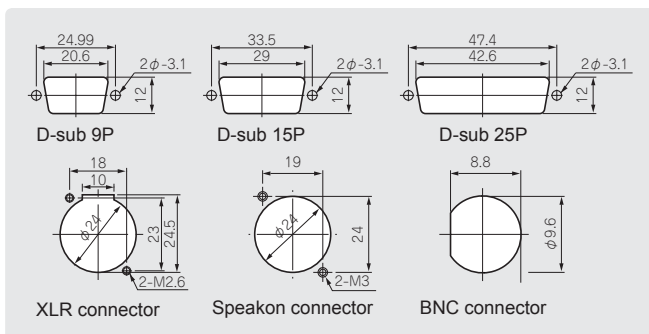
Complex or large rectangular shapes can be punched out with multiple presses.

## Nibbling press (round)

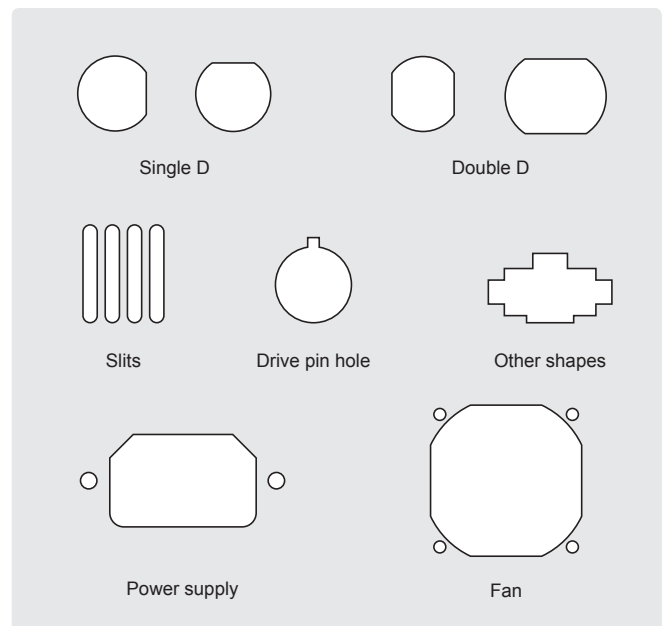


Punching of large circular holes with multiple smaller die strokes.

## Common connector shapes



## Unique shapes



## Burring punch



Increasing surface area on a thin metallic sheet for screw threads to bore into.

