EX Aluminum Enclosure Series

Instruction manual

IECEx KSCP 23.0046U
KSCP 23ATEX0023U
2023-12-22

The EX Aluminum Enclosure series is made of aluminum die castings painted in grey. Because of its strong feature against external impacts, it is used for the sensor limit switch on the production line of industrial machines and the middle terminal of all kinds of switches.
Also, The series is packed with a silicone gasket and has an excellent waterproof and dust-proof effect with an IP66 grade. So you can use it variously for welding machines, vessels and automobiles, petrochemical plant facilities, oil feeders, and gas supply facilities.

This series is designed for use in any environment where an explosive atmosphere may be present. Also, this complies with IEC 60079-0:2017, IEC 60079-7:2015+A1:2017, EN 60079-0:2018, EN 60079-7:2015/A1:2018.

Nomenclature

SG — EX 0000 00 — Height

Basic Model Name

Width and Length(the short comes first)

Approvals

IECEx marking	Ex eb IIC Gb Ex tb IIIC Db
ATEX marking	II 2G Ex eb IIC Gb II 2D Ex tb IIIC Db

Features

- ATEX explosion-proof Approved Model
- Ground terminal Connected
- Use star L wrench
- Waterproof, dust to allow the special process.
- Mounting plates are available separately.

※ Certificates : Ex CE RoHS

Product Specification

Material & Thickness	Aluminum 3.5 ~ 4mm thickness
Surface Finish	Painting 0.06mm Color : EP402K(B.Y Grey)
IP Protection Grade	IP66 to IEC 60529
Earthing Inside	M4/8 Steel Earth Bolt (1ea each on Cover and Base)
Earthing Outside	M4/8 Steel Earth Bolt (1ea on Base)
Gasket Material	Silicone

※ Tolerance : ± 1mm

Measurement

No.	Model	W (mm)	D (mm)	H (mm)	Gasket (W*H, mm)
1	SG-EX617148	61	71	48	1.7*1.5
2	SG-EX709352	70	93	52	2.4*2.5
3	SG-EX127052	70	128	52	2.3*2.0
4	SG-EX157055	70	158	55	2.5*2.5
5	SG-EX111152	110	110	52	2.5*2.0
6	SG-EX177055	70	172	55	2.4*2.0
7	SG-EX101008	100	100	80	2.5*1.5
8	SG-EX121462	125	145	62	2.5*2.0
9	SG-EX121208	120	120	80	2.3*2.0
10	SG-EX802308	80	235	80	2.4*2.5
11	SG-EX121908	125	190	80	2.6*2.0
12	SG-EX161609	160	160	90	2.7*3.0
13	SG-EX122209	125	223	90	2.7*3.5
14	SG-EX162110	160	210	100	3.0*2.0
15	SG-EX162609	161	263	90	2.6*3.0
16	SG-EX233312	230	330	120	3.0*2.0

Name plate & Laser marking _ SG-EX-AL series

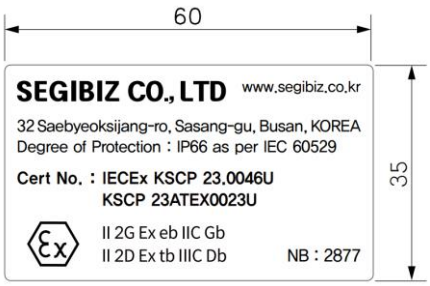
- Laser marking is on the broad side of base, Name plate is attached to the inside of the cover

1. Name plate

Small

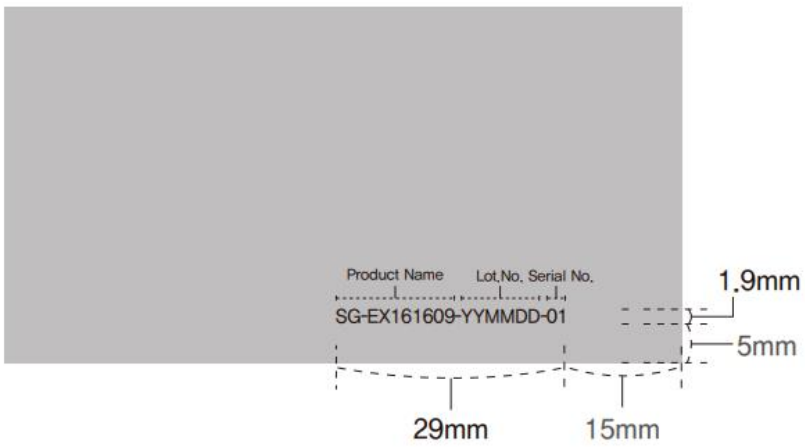
[Box size]
From SG-EX617148
To SG-EX121208

Large



[Box size]
From SG-EX802308
To SG-EX233312

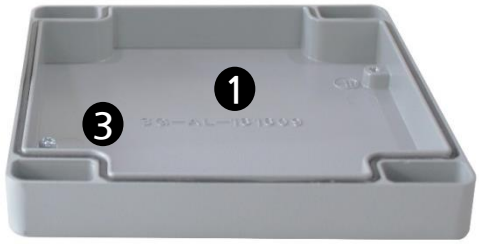
2. Laser marking



Font : Width 29mm / Length 1.9mm

[윤고딕 330 / 7.05pt]

1. SG EX 161609 YYMMDD 01 : T 98%
2. – : T 50%



1. Aluminum Cover
2. Aluminum Base
3. Earth Bolt (in Cover)
4. Earth Bolt (in Base)
5. Cover Bolts (Torx)
6. Earth Bolt (outside)

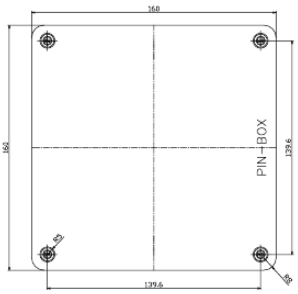
Silicone Gasket &
Earth bolts (in Cover)

Earth bolts (in Base)

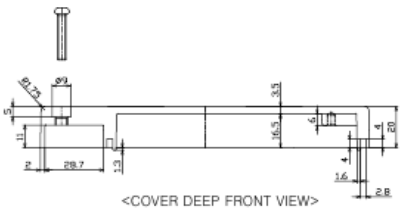
Earth bolts (outside)

※ Use at least 4 square wires for the outside

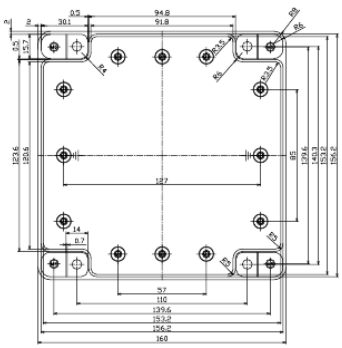
Section Drawing



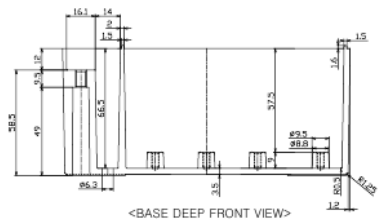
<COVER TOP VIEW>



<COVER DEEP FRONT VIEW>



<BASE TOP VIEW>



<BASE DEEP FRONT VIEW>

※ Note

Inform you that it is the responsibility of the user to maintain the Ex-proof after the punching according to the installation standard such as using an Ex-proof cable gland, etc.

Information of bolts

No.	Model	Cover Bolt	Head Size (Torx)	Earth Bolt
1	SG-EX617148	M4*22	M4 (T-20)	M4*8
2	SG-EX709352	M4*18	M4 (T-20)	M4*8
3	SG-EX127052	M4*18	M4 (T-20)	M4*8
4	SG-EX157055	M5*17	M5(T-20)	M4*8
5	SG-EX111152	M4*18	M4 (T-20)	M4*8
6	SG-EX177055	M5*17	M5(T-20)	M4*8
7	SG-EX101008	M5*24	M5(T-20)	M4*8
8	SG-EX121462	M5*17	M5(T-20)	M4*8
9	SG-EX121208	M5*24	M5(T-20)	M4*8
10	SG-EX802308	M5*24	M5(T-20)	M4*8
11	SG-EX121908	M6*35	M6 (T-25)	M4*8
12	SG-EX161609	M6*35	M6 (T-25)	M4*8
13	SG-EX122209	M6*35	M6 (T-25)	M4*8
14	SG-EX162110	M6*35	M6 (T-25)	M4*8
15	SG-EX162609	M6*35	M6 (T-25)	M4*8
16	SG-EX233312	M6*43	M6 (T-30)	M4*8

Installation

- Use only at specified ambient temperature(-20℃ ~ 40℃) and voltage(AC 250V)
- If the box is under routinely heavy pressure, use it under safety protection
- Enclosure can be mounted anywhere you want to install using four parts of the base

1. Assembly and Dismantling

- Loosen 4 wrench bolts on the cover by turning it counterclockwise, with a star wrench that fits the cover bolts' head size of the model.

  ※ Refer to (T-**) in the table on the 06 page for the appropriate star wrench specifications.

- Put the cover on the base in the right direction, and then turn the wrench bolts clockwise with the correspoinding star wrench.

2. Box Mounting

- Read these instructions carefully before installing this box
- This procedure describes how the Enclosure is installed at the mounting location.

① Check the enclosure before installing.

② Open the lid of the box using L-wrench.

③ Fix the box on an appropriate surface with bolts.
Use the four holes that are located in each corner of this enclosure.

※ Note : The junction box can be mounted in any position, It is however recommended to install them with the even surface which is firm, flat, and dry such as aluminum, steel, etc.

※ Check the standard tightening torque below before installing.

- These values are calculated from the assumption of a standard working environment.

Torque	M4*18	M4*22	M5*17	M5*24	M6*35	M6*48
(N·m)	0.91	0.91	1.38	1.38	1.85	3.12
(Kgf·cm)	9.25	9.25	14.05	14.05	18.84	31.86

Please note that the above value is only a reference but not absolute.
It may vary depending on your environment such as tools, temperature, lubricants, etc.

④ Fix the lid to the box.

⑤ Tighten mounting hardware to secure.

- Use approved cable entrance(cable gland) from IECEx with satisfying IP66

3. Setting condition

- Please set up the Enclosure in the place satisfying below condition.

① The place where there is no inflow dust inside of the unit.

② The place where there is no water or oil, etc.

③ The place where there are no continuous vibration or inordinate impact, etc.

④ The place where there are no flammable or explosive gas.

⑤ The place where there is less salt content

4. Maximum number of cable glands

Model	Spaces that allowed to make holes (mm) (W*D)	Max. number of cable glands with thread diameter (≤…mm)					
		16	20	25	32	40	50
SG-EX617148	35.6*35.6	4	-	-	-	-	-
SG-EX709352	52.8*44	4	4	4	-	-	-
SG-EX127052	83.1*44.8	6	6	6	-	-	-
SG-EX157055	110*43.2	8	8	6	-	-	-
SG-EX111152	67.5*83.8	8	8	6	-	-	-
SG-EX177055	124*43.2	10	8	8	-	-	-
SG-EX101008	47.2*67.2	12	6	4	4	2	-
SG-EX121462	99.4*95.4	20	8	6	4	4	-
SG-EX121208	69.6*89.6	28	12	10	6	4	-

Model	Spaces that allowed to make holes (mm) (W*D)	Max. number of cable glands with thread diameter (≤…mm)					
		16	20	25	32	40	50
SG-EX802308	168*42	28	10	10	6	-	-
SG-EX121908	125.6*85.6	28	20	10	6	-	-
SG-EX161609	89.8*118.6	28	20	10	6	6	-
SG-EX122209	152.8*83.6	28	24	10	8	6	-
SG-EX162110	136.19*116.2	32	28	10	8	6	4
SG-EX162609	193*120.4	40	32	14	12	10	-
SG-EX233312	236*176	84	48	40	16	12	10

* For use in an explosive atmosphere, make the hole only on the side of the box base, and avoid around the cover bolts(Refer to the product drawings for the exact figures of the cover bolt hole).

* Have considered 1mm free space on each side of the enclosure so as not to weaken the IP grade of the enclosure

* Refer to the size chart on page 2 for 'W' and 'D'.

Ensure that you read and understand this document before installing/operating the equipment. Pay particular attention to the Warnings.

WARNING ⚠

- Do not install in hazardous areas.
- Do not install it near the heating or cooling source.
- Be sure there is no capacitor or hot component inside the box.
- The Grounding conductor shall be provided.
- The terminal or cable gland that complies with IEC 60079 series, shall be used.
- Wiring which might come into contact with a conductive part shall be either mechanically protected and secured or routed to avoid insulation damage.
- Install to prevent the accumulation of condensation and be sure water and dust are not in the box after installation.
- Use only in clean environments.
- Clearance and creepage between conductive parts at different potentials, electrical connection, and enclosure, shall not be less than the specified value, taking into account the working voltage.
- In order to ensure the ingress protection IP, the cover of the empty enclosure, the base of empty enclosure, the sealing frame and other Ex-components must be properly installed and with the appropriate torque.
- Entries shall be done with respect for size, location, and number permitted by the enclosure manufacturer.