

JUNCTION BOX

2024 It is produced by KME Co., Ltd

CATALOGUE

KJB G SERIES Ex JUNCTION BOX OPERATING MANUAL

Glass Fibre Reinforced Polyester
Terminal Junction Box



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Company introduction

· History

- 2024 12 **Kaune** sole agency in South Korea.
- 07 **Astro** sole agency in Marine Segment.
- 07 **B-15 fire back box** achieves BV Certification for fire protection.
- 2023 12 Registered vendor to **KANGNAM** Shipbuilding.
- 09 Registered vendor to **MODEC**.
- 08 Registered vendor to **SEATRUM**.
- 03 Establishment of **Unit Toilet Factory**.
- 2022 05 Registered vendor to **HSG Sungdong** Shipbuilding.
- 04 Acquired ISO 45001:2018 certification.
Registered vendor to **DAE SUN** Shipbuilding & Engineering Co., Ltd.
- 02 Registered vendor to **Hyundai** Heavy Industries.
- 2021 09 Registered vendor to **Zvezda** Shipbuilding in Russia.
- 06 Development of **GRP Ex Junction Box** certification completed.
- 2020 06 Registered vendor to **Hanjin** Heavy Industries.
- 2019 10 Registered vendor to **Hyundai Mipo** Dockyard (HMD) Co., Ltd.
- 2014 06 Registered vendor to **DAEWOO** Shipbuilding & Marine Engineering Co., Ltd.
-Low Location Light for H.3401
- 2013 10 Registered vendor to **SAMSUNG** Heavy Industries Co., Ltd.
- 2009 02 **Established KME Co., Ltd.**



※ For more information visit h-kme.com

· Location



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Gimhae (Office/factory)

25, Seobu-ro 1331beon-gil, Juchon-myeon,
Gimhae-si, Gyeongsangnam-do, South Korea



· Further documents

※ Data sheet For further languages, see www.h-kme.com

· Certificate

ISO 9001:2015

IECEX KTL 21.0008X

BRN 606-86-14854

ISO 14001:2015

KR/KTL/QAR20.0010/00

ISO 45001:2015

GRP Ex JUNCTION BOX DNV-GL

※ Data sheet For further languages, see www.h-kme.com



Explanation of the symbols

· Symbols in these operating instructions



Tips and recommendations on the use of the device



General danger



Danger due to explosive atmosphere



Danger due to energised parts

· Warning notes

Warning notes must be observed under all circumstances, in order to minimize the risk due to construction and operation.

The warning notes have the following structure



DANGER

Danger to persons Non-compliance with the instruction results in severe or fatal injuries to persons.



WARNING

Danger to persons Non-compliance with the instruction can result in severe or fatal injuries to persons.



CAUTION

Danger to persons Non-compliance with the instruction can result in light injuries to persons.

NOTE

Avoiding material damage Non-compliance with the instruction can result in material damage to the device and / or its environment.



Safety notes

· Operating instructions storage

Read the operating instructions carefully and store them at the mounting location of the device.

Observe applicable documents and operating instructions of the devices to be connected.



· Safe use

Read and observe the safety notes in these operating instructions!

Use the device in accordance with its intended and approved purpose only.

We cannot be held liable for damage caused by incorrect or unauthorized use or by non-compliance with these operating instructions.

Before installation and commissioning, make sure that the device is not damaged.

Work on the device (installation, maintenance, overhaul, repair) may only be carried out by appropriately authorized and trained personnel.

During installation and operation observe the information (characteristic values and rated operating conditions) on the rating, data and information plates located on the device.

Always consult with KME Co., Ltd. in case of operating conditions which deviate from the technical data.

Technical data

Compliance Standard

IEC/EN 60079-0:2017 | 60079-7:2015 | 60079-31:2013

Certificate

IECEXKTL 21.0008X

Regulation

Zone 1,2 & 21,22 Gas Group IIA, IIB, IIC Dust Group IIIA, IIIB, IIIC

Operating temperature

-60°C ~ 110°C

Ambient temperature

-60°C ~ +40°C / T6 -60°C ~ +55°C / T5

Code of Protection

Ex ebIIIC T6/T5 Gb | Ex tbIIIC T80°C/T95°C Db

Ingress Protection

IP66

Material

Glass Fibre Reinforced Polyester (GRP)

Gasket Material

Silicon Rubber

UV Protection

1000hr (IEC 60079-0)

Impact Resistance

7Nm (EN 50014)

Color

Black



· Typical terminal load configuration

The below given theoretical values are calculated depending on typical configurations.

In any terminal box, the maximum heat dissipation power must not be exceeded. Maximum current value for terminals must be calculated with choosing the right class and maximum ambient temperature.

The maximum number of terminals which may be fitted inside the junction box is calculated using following formula

$$\text{Power} = I^2 \times N (R_t + R_c) \text{ Watts}$$

- ⓘ Actual current through the conductor up to the maximum permitted certified current of the terminal when fitted in a junction box (Amps).
- Ⓝ Number of terminals.
- Ⓜ Terminal resistance (Ohms at 20°C)
- Ⓜ Resistance of one conductor per current bar (Ohms at 20°C) when using a maximum diagonal cable length listed in the above table.

* Maximum current shall be limited to 80%.

G121209 (P max : 7.8W)

G161609 (P max : 8.4W)

G261609 (P max : 10.5W)

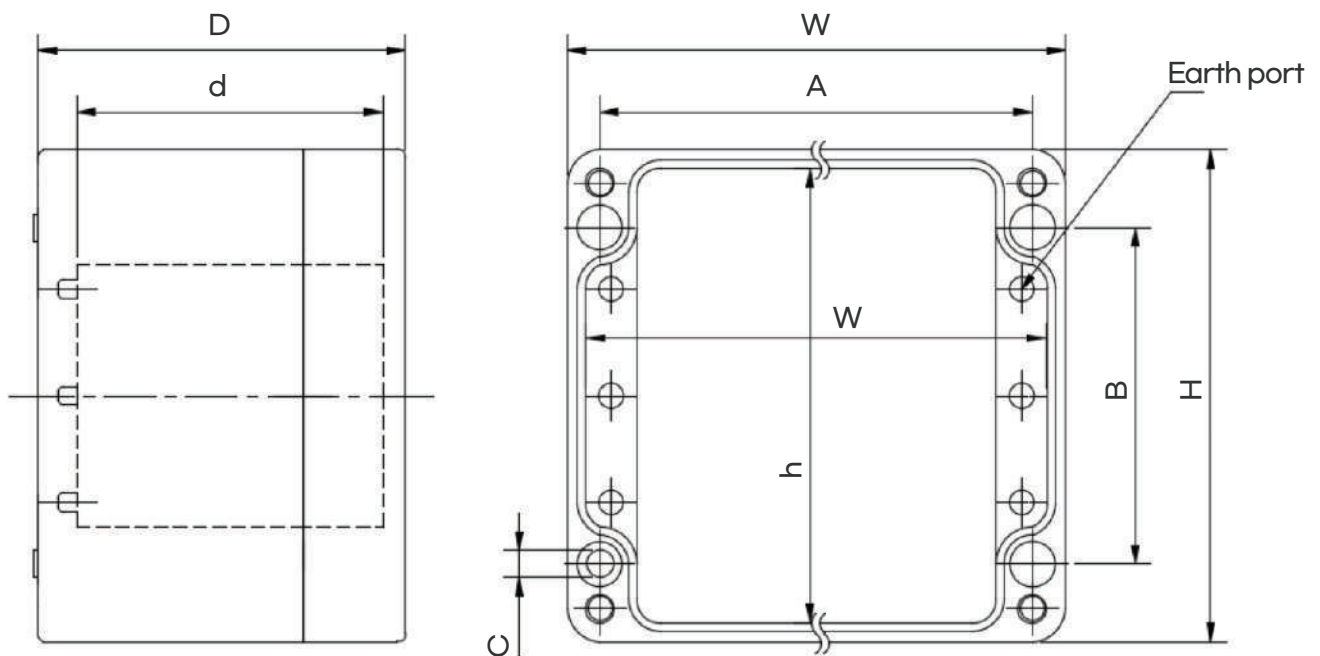


Transport and storage

- ✔ Transport and store the device only in the original packaging.
- ✔ Store the device in a dry place (no condensation) and vibration-free.
- ✔ Do not drop the device.

Mounting and installation

· Dimensions



TYPE	External dimension(mm)			Internal dimension(mm)			Mounting(mm)			Weight(kg)
	W	H	D	w	h	d	A	B	C	
KB-G121209	122	120	90	113	111	72	106	82	6.5	0.75
KB-G161609	160	160	90	151	151	77	140	110	6.5	1.1
KB-G261609	260	160	90	251	151	77	240	110	6.5	1.2

※ Internal Volume

G121209 : 815m³ | G161609 : 1338m³ | G261609 : 2604m³

· Mounting / dismounting, operating position



DANGER

Explosion hazard due to incorrect installation of the device!
Non-compliance results in severe or fatal injuries.

Carry out installation strictly according to the instructions and national safety and accident prevention regulations to maintain the explosion protection.

Select and install the electrical device so that explosion protection is not affected due to external influences, i.e. pressure conditions, chemical, mechanical, thermal and electric impact such as vibration, humidity and corrosion (see IEC/EN 60079-14).

The device must only be installed by trained qualified personnel who is familiar with the relevant standards.



WARNING

Risk of heavy device falling down! Non-compliance can result in severe or fatal injuries and material damage.

Use suitable lifting tool. Secure against tilting.

This device is suitable for outdoor and indoor use.

Provide a protective roof or wall if enclosure and explosion protected electric equipment is used outdoors.

Information regarding mechanical assembly, such as location of fastening points, dimensions or weight of the switchgear combinations, is given in the enclosed assembly drawing.

Observe the weight of the enclosure according to the type and number of the built-in components.

When installing our product, the penetration hole cannot be applied except for the existing hole.



· Installation



DANGER

**Explosion hazard due to impermissible cable glands!
Non-compliance results in severe or fatal injuries.**

Use only cable glands approved for the required type of protection.

When selecting cable glands, observe the thread type and thread size in the equipment documentation.

Make sure that the conductor diameter matches the clamping cross-section of the cable glands.



DANGER

**Explosion hazard due to incorrectly laid cables in the
Ex e, Ex t enclosure! Non-compliance results in severe or fatal injuries.**

Adhere to the required creepage distances and clearances.

Fasten mounting rails or elements properly.



DANGER

**Explosion hazard due to cable glands without strain relief!
Non-compliance results in severe or fatal injuries.**

Lead cables and conductors securely.

If the cables are laid loosely, use only cable entries approved for this type of cable laying.



WARNING

**Danger of electric shock due to energised parts!
Non-compliance can result in severe or fatal injuries.**

All connections and wiring must be disconnected from the power supply.

Secure the connections against unauthorized switching.



If core end sleeves are used,
they must be fitted with a suitable tool.

Cable and wire Installation, Cable gland



According to IEC 60079-0 Ed. 7, only IEC-prototype tested and certified cable and wire installations, cable glands and din rails must be used. Only permanently fixed cables and wires must be installed. The operator must ensure appropriate strain relief. When used in area where there is flammable dust, only ex-tested cables and wire installations and cable glands may be used.

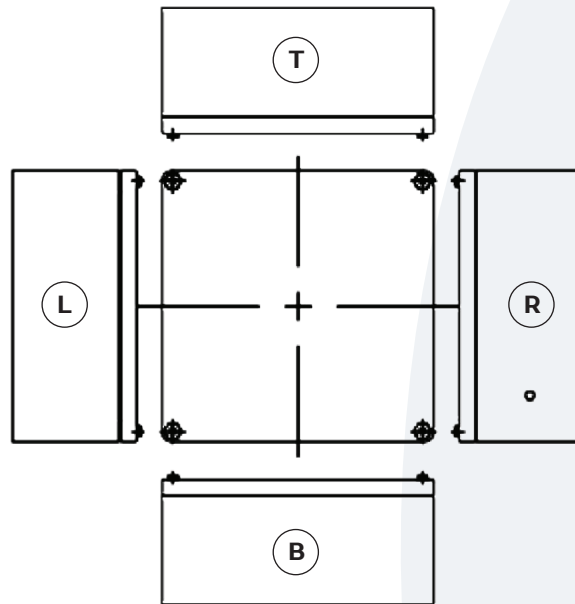
Interior Max cable length

G121209 (Max : 150mm) | G161609 (Max : 200mm) | G261609 (Max : 270mm)

Ex box Internal wiring is carried out by user

KME assemble junction box, terminal block and applicable cable glands.

A GUIDE TO ENTRY CAPACITY*



Entry Thread Size (mm)	G121209		G161609		G261609	
	T/B	L/R	T/B	L/R	T/B	L/R
Ø17	2	1	4	3	9	3
Ø21	2	1	3	2	5	2
Ø26	2	1	2	2	4	2
Ø33	1	1	2	1	3	1

AVAILABLE CABLE AND CABLE GLAND

certified cable gland shall be used that made of non-metallic materials, when used with metallic cable gland, earth-tag shall be used together.

Use the earth tag when using metal cable gland, and the equipotential bonding(EP) cable size is at least 4mm. //

Cross-sectional area of phase conductors, S mm ²	Minimum cross-sectional area of the corresponding PE conductor, SP mm ²	BOX	Gland Size
S ≤ 16	S	G121209	M16 M20 M25 M32
16 < S ≤ 35	16	G161609	M16 M20 M25 M32
S > 35	0.5 S	G261609	M16 M20 M25 M32

A GUIDE TO PHYSICAL TERMINAL CAPACITY

MAKER	MODEL	CERTIFICATION
PHEONIX	ST	IECEXKEM 06.0033U
WEIDBULLER	WDU	IECEXULD 14.0005U

ENTRY	121209	161609	261609
2.5 SQ	12	19	39
4 SQ	10	16	32
6 SQ	8	12	25
10 SQ	6	10	20
16 SQ	5	8	16
35 SQ	4	5	12

EARTHING

Our products are provided with internal earthing port.

EARTHING BOLT

M6 X 15L, button head screw, Stainless steel

EARTHING LUG

M6, ring type , PVC insulated (yellow or green)



Commissioning



DANGER

**Explosion hazard due to incorrect installation!
Non-compliance results in severe or fatal injuries.**

Check the device for proper installation and function before commissioning.
Comply with the national regulations.



Before commissioning, ensure the following

- Check the mounting and installation.
- Inspect enclosure for damage.
- Check whether the cables have been inserted correctly.
- Check if all screws and nuts have been tightened firmly.
- Check whether all the cable entries and stopping plugs have been tightened firmly.
- Check whether all conductors have been clamped firmly.
- Check whether all covers and partitions for live parts have been installed and gasketed.
- Seal unused cable entries using plugs with a respective certification and unused holes with stopping plugs certified for the respective type of protection.

Operation

The control and distribution devices are installed in customer-specific installations. The requirements during operation therefore depend to a large extent on the operating conditions and the installation on site.

i In order to ensure a correct operation, observe the documentation and the **instructions of the operating company!**

Maintenance and repair



WARNING



Risk of electric shock or malfunctioning of the device due to unauthorized work!
Non-compliance can result in severe injuries and material damage.

Work performed on the device must only be carried out by appropriately authorized and qualified electricians.

· Maintenance

Consult the relevant national regulations to determine the type and extent of inspections. Adapt inspection intervals to the operating conditions.

During maintenance of the device, check at least.

- Whether the clamping screws holding the electric lines are securely seated.
- Whether the device enclosure and / or protective enclosure have cracks or other visible signs of damage.
- Whether the permissible ambient temperatures are observed.
- Whether the device is used according to its designated use.

· Maintenance



WARNING

Danger of electric shock due to energised parts!
Non-compliance can result in severe or fatal injuries.
Work performed on the device must only be carried out by appropriately authorized and qualified electricians.

All connections and wiring must be disconnected from the power supply.
Secure the connections against unauthorized switching.



Observe the relevant national regulations in the country of use.



Exception!

Devices with intrinsically safe and non-intrinsically safe circuits provided with the note "Non-intrinsically safe circuits protected by internal IP30 cover" can be opened while carrying voltage

· Repair



WARNING

Explosion hazard due to improper repair!
Non-compliance results in severe or fatal injuries.

Repair work on the devices must be performed only by KME



If the components are damaged, they must be replaced.



Cleaning

Clean the device only with a cloth, brush, vacuum cleaner or similar items.

When cleaning with a damp cloth, use water or mild, non-abrasive, non-scratching cleaning agents.

Do not use aggressive detergents or solvents.

Disposal

Observe national and local regulations and statutory regulation regarding disposal.

Separate materials when sending it for recycling.

Ensure environmentally friendly disposal of all components according to the statutory regulations.



Future-Oriented Vision

KME Co., Ltd. is committed to continuous research and development to improve safety and efficiency in the maritime industry.



Continuous Innovation

We will lead the advancement of the maritime industry by continuously developing new technologies and solutions.



Global Partnerships

Strengthening our global network to create value in various markets by collaborating with customers worldwide.

Our products offer high-quality junction boxes tailored to meet the diverse needs of our customers, contributing to the safety and efficiency of electrical wiring systems. We provide reliable products that ensure a stable electrical environment anywhere.





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