

# Operating Instructions Explosion Proof Junction Box Model A1723



# THT-EX

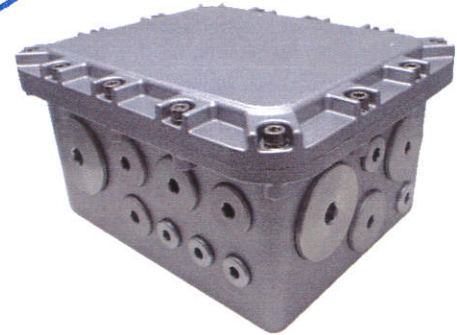
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## 1. General Safety Instructions

### WARNING

This manual contains basic safety instructions to be observed during installation, operation and maintenance of the apparatus, and for properly and safety run of the apparatus according to its performance data. Any damage of the apparatus may result explosion protection null and void. This manual represents the most relevant information about the product, applicable codes and regulations shall supplement it. Non-observance will endanger persons, plant and the environment. The person in charge is required to secure its employment in the industrial unit. Any improper usage, as well as non-compliance with the rules under this manual, shall release the manufacturer's all responsibilities.

The flameproof joints are not intended to be disassembled or repaired.

#### Specific Conditions of Use:

- Electrostatic charging hazard - Clean only with a damp cloth.
- Use fasteners with yield stress  $\geq 328$  MPa.
- Each threaded opening shall have no more than one thread adapter when an adapter is used. A blanking element shall not be used with an adapter.

### 1.1 Before assembly/commissioning:

- ☞ Read through the operating instructions.
- ☞ Give adequate training to the assembly and operating personnel.
- ☞ Ensure that the contents of the operating instructions are fully understood by the personnel in charge.
- ☞ The national installation and assembly regulations (e.g. IEC 60079-14) apply.

### 1.2 When operating the device:

- ☞ Ensure the operating instructions are made available for the person in charge on location at all times.
- ☞ Observe these instructions, other working instructions and national safety regulations.
- ☞ Verify the implementation of safety instructions.

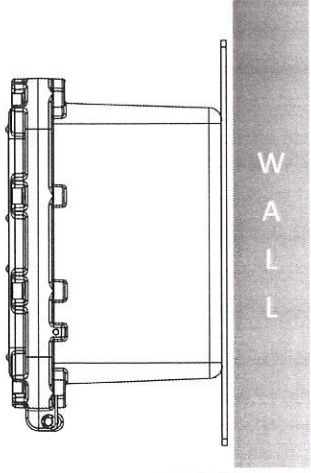
## 2. Intended Field of Application

The Explosion Proof Junction box, Model A1723 is intended for using in gas explosive atmospheres (Zone 1 and Zone 2 according to IEC 60079-10-1) and dust explosion hazards (Zone 21 and Zone 22 according to IEC

60079-10-2). The use in other potentially explosive atmospheres does not correspond to the designated use and is therefore not allowed.

The apparatus is designed for using in indoor and outdoor environments.

### 3. Technical Data

Item	Description
Explosion Protection IECEX Gas Explosion Protection Dust Explosion Protection ATEX Gas Explosion Protection Dust Explosion Protection	Ex db IIB+H <sub>2</sub> T5 Gb Ex tb IIIC T95°C Db  ⊕ II 2 G Ex db IIB+H <sub>2</sub> T5 Gb ⊕ II 2 D Ex tb IIIC T95°C Db
Rated Terminal Block Voltage/Current	<div>Screw type</div> <div>D15:1000Vac-----150A D10:630Vac-----120A D06:630Vac-----76A D03:800Vac-----25A D02:800Vac-----20A</div> <div>Cage Clamp type</div> <div>WA0:1000Vac-----100A W16:800Vac-----50A W10:800Vac-----40A W06:800Vac-----30A W04:800Vac-----20A</div>
Ambient Temperate Range	-20°C ~ +50°C
Degree of Protection	IP67
Thread Size	Please see Table 1.
Cable OD Range	NPT 3/8"(M16) hole ----- 3.1~8.6mm NPT 1/2"(M20) hole ----- 6.5~14.0mm NPT 3/4"(M25) hole ----- 11.0~20.0mm NPT 1"(M32) hole ----- 17.0~26.3mm NPT 1-1/4"(M40) hole ----- 22.0~32.2mm NPT 1-1/2"(M50) hole ----- 29.5~38.2mm NPT 2"(M63) hole ----- 35.6~44.0mm  *Maximum Cable Entry point temp. 81.4°C *Maximum Cable Branch point temp. 85.6°C
Material Enclosure O-ring (Gasket) Accessories	Aluminium alloy Silicone SUS 304
Mounting Type / Weight	Wall Mounting
	
	Weight 13.7kg





## 4. Model Code

### 4.1 Standards

THT	J	1723	0	D15	01	0	0	0	0
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

(1) Brand name, THT = Top Hi-Tech Co., Ltd

(2) Category of product, J = Explosion proof Junction Box

(3) Model name, 1723 = Model A1723 series

(4) Sub-series

(5) Terminal Type:

Screw type	Cage Clamp type
D15	WA0
D10	W16
D06	W10
D03	W06
D02	W04

(6) Quantity of Terminal, 01=1Pcs,10=10Pcs (The max. quantity of terminal,please see Table 3.)

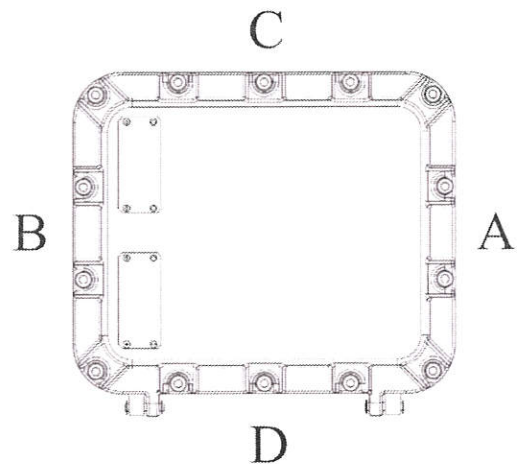
(7) Thread type of side A

(8) Thread type of side B

(9) Thread type of side C

(10) Thread type of side D

Code	Thread type	Quantity			
		Side A	Side B	Side C	Side D
0	No hole	-	-	-	-
1	M63	1	1	2	2
2	M50	2	2	3	3
3	M40	2	2	3	3
4	M32	6	6	8	8
5	M25	6	6	8	8
6	M20	8	8	10	10
7	M16	8	8	10	10
A	NPT 2"	1	1	2	2
B	NPT 1-1/2"	2	2	3	3
C	NPT 1-1/4"	2	2	3	3
D	NPT 1"	6	6	8	8
E	NPT 3/4"	6	6	8	8
F	NPT 1/2"	8	8	10	10
G	NPT 3/8"	8	8	10	10



### 4.2 Customize

#### 4.2.1 Model follow by Customize

Below is Model Code for Customize when Standards cannot conform the customer requirement

THT	J	1723	XXXXXXXXXX
(1)	(2)	(3)	(4)

(1) Brand name, THT- = Top Hi-Tech Co., Ltd

(2) Category of product, J = Explosion proof Junction Box

(3) Model name, 1723 = Model A1723 series

(4) Variant number,

Example: C1234 0001

(a) (b)

(a) Customer number (Designated by THT)

(b) Serial number

#### 4.2.2 Defined area and Removal rule

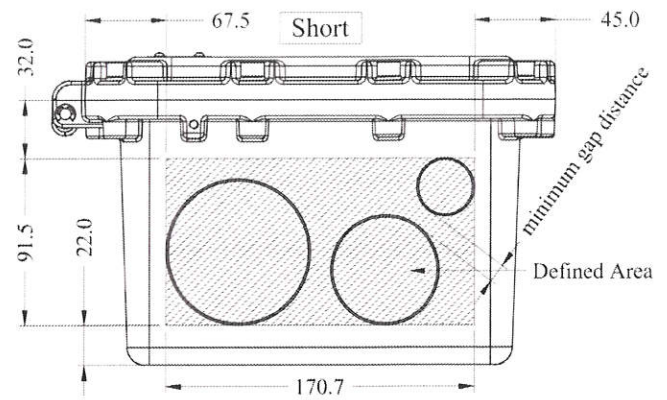
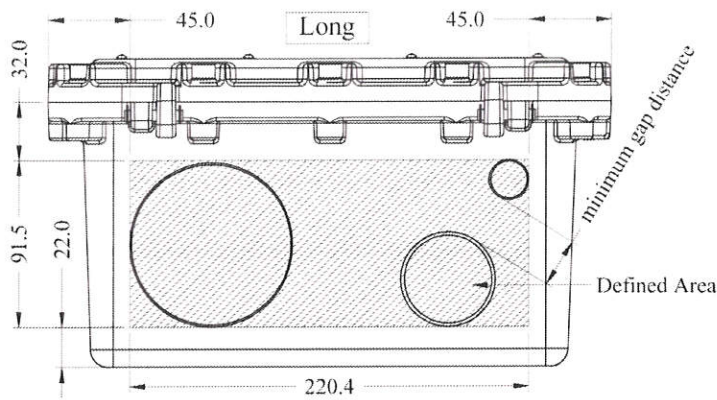


Table 1 (Quantity of Thread Holes)

Type\side	Short	Long
M16 / NPT 3/8"	8	10
M20 / NPT 1/2"	8	10
M25 / NPT 3/4"	6	8
M32 / NPT 1"	6	8
M40 / NPT 1-1/4"	2	3
M50 / NPT 1-1/2"	2	3
M63 / NPT 2"	1	2

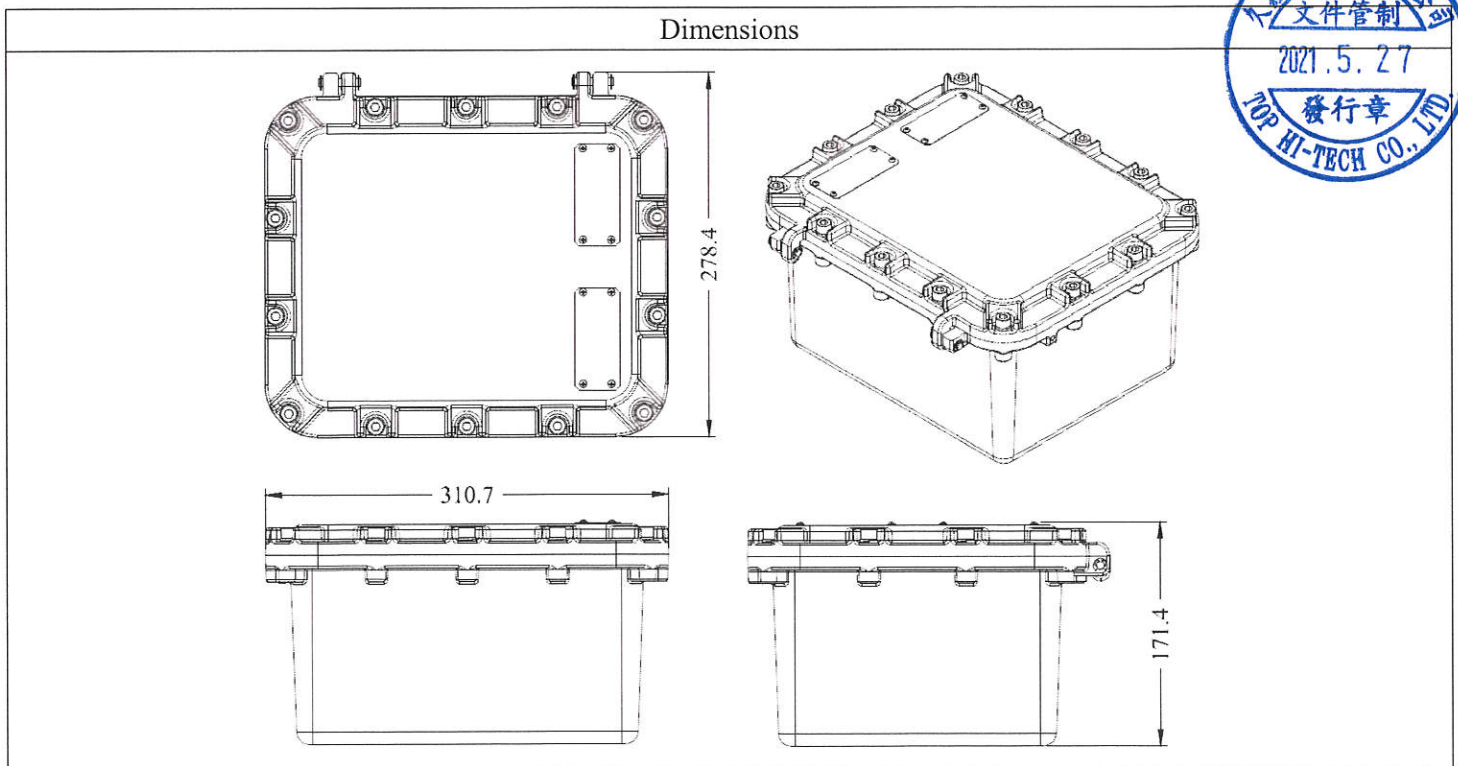
Table 2(Minimum gap distance between the Thread holes )

Thread size	3/8(M16)	1/2(M20)	3/4(M25)	1(M32)	1-1/4(M40)	1-1/2(M50)	2(M63)
3/8(M16)	18.0						
1/2(M20)	18.0	18.0					
3/4(M25)	18.0	18.0	18.0				
1(M32)	17.5	17.5	19.0	18.0			
1-1/4(M40)	19.5	19.5	20.0	20.0	22.0		
1-1/2(M50)	19.5	19.5	20.5	20.0	22.0	22.0	
2(M63)	20.0	20.0	21.0	20.5	22.0	22.5	22.5

Note:

1. The thread holes only process the defined area, Do not allowed to cross the defined area.
2. The type and quantity of thread holes must comply with Table 1 requirement.
3. The minimum gap distance between the Thread holes must comply with Table 2 requirement.
4. All the ISO metric screw Threads must be meet the 6g/6H of standard ISO 965-1 and ISO 965-3.
5. Threads shall conform to the NPT requirements of ANSI/ASME B1.20.1, and shall be made-up wrench tight.  
Male threaded fittings with a shoulder or interruption shall be provided with:
  - (a) an effective thread length not less than the "L2" dimension ;and
  - (b) a length not less than the "L4" dimension between the face of the shoulder and end of the fitting thread.

#### 5. Dimensions (All dimensions in mm) – Subject to Alterations



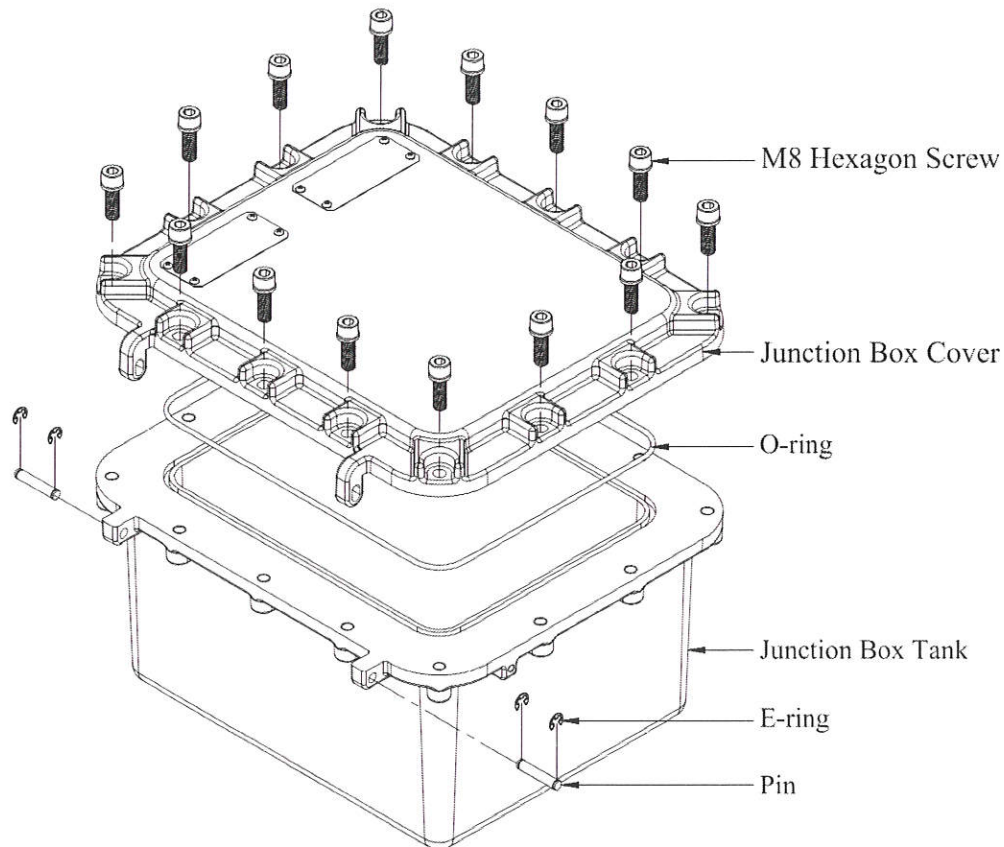


## 6. Installation

### WARNING

During wiring, be sure to turn off the input power in case the action to touch any component on junction box, or insert and extract accessories (eg, cables) is required. Otherwise, electric shock, Short circuit, damaged component will be caused if the power is on.

### 6.1 Part Assembly Function



### Installation:

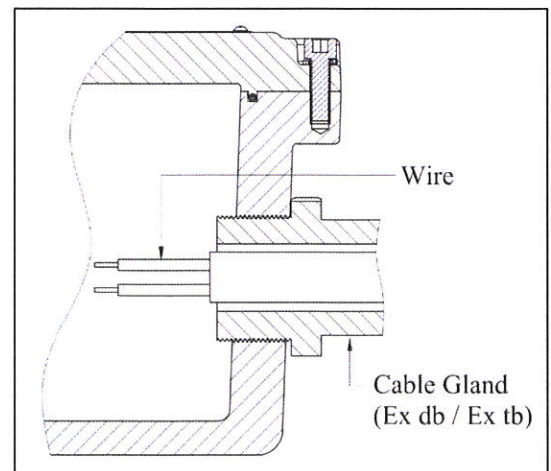
- ☞ Please loosen the M8 Hexagon screw (combine the M8 washer) on the junction box cover to open the cover. Please taking extreme care not to damage the surface in the process. (Torque Values:61.0 kgf-cm.)
- ☞ Please check that the O-ring are installed when fixing the hexagon screw
- ☞ Fix the M8 hexagon screw to the tank through the cover .Please taking extreme care not to damage the surface in the process.

### Electrical Connection

- ☞ Securely fasten on the enclosure with suitable cable gland and make certain the cable gland is wrench tight.
- ☞ Pull wires into enclosure, making sure they are long enough to make the required electrical connections. Make all electrical connections.
- ☞ Test wiring for correctness with continuity checks and also for unwanted grounds with insulation resistance tester.
- ☞ Make certain the wire is wrench tight on the Terminal Blocks.

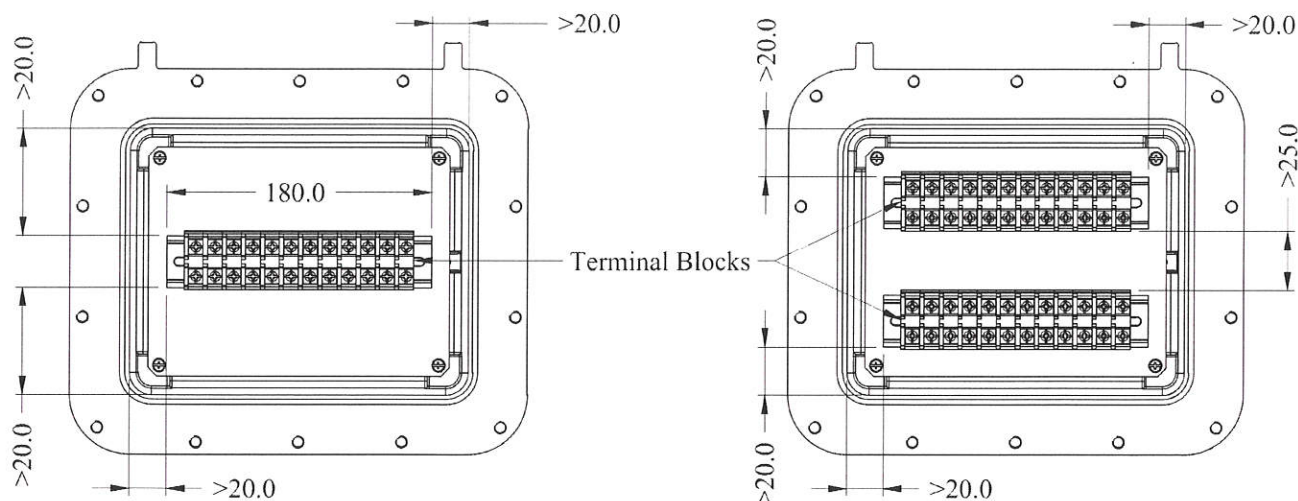
### Attention:

- ☞ The Cable Gland must be pass the Ex db/Ex tb certification that approved by IECEx.
- ☞ If a high IP rating is required then a suitable sealing washer must be fitted under the cable glands.
- ☞ Only original A1723 part must be used for replacement and repair on the accessories



## 6.2 Inserting Conductor

### 6.2.1 Quantity and specification of Terminal Block



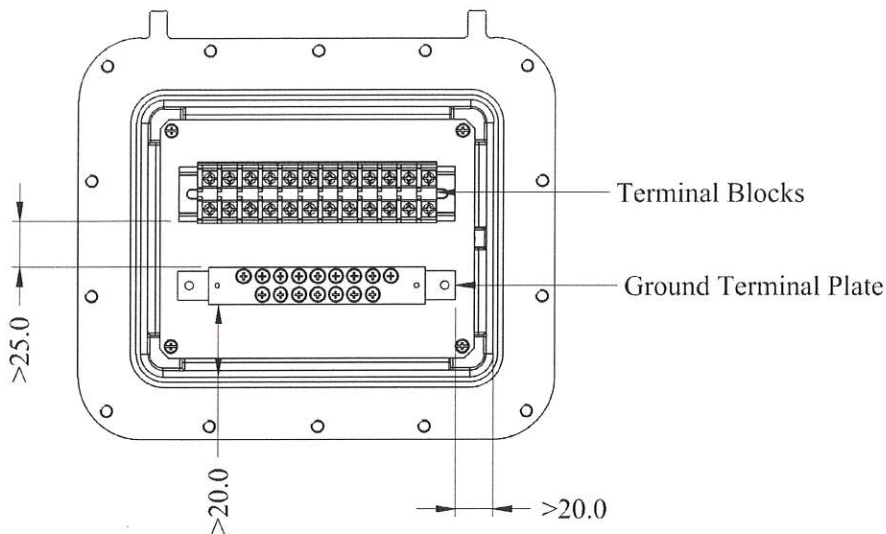
Terminal Blocks Specification (Table 3.)

Series	Terminal type	Electrical data	Max Quantity	The cross sectional area of wire	Strip Length
D15	Screw type	1000V / 150A	6	10.0~70.0mm <sup>2</sup>	N/A
D10		630V / 120A	5	10.0~25.0mm <sup>2</sup> (Bare wire) 10.0~50.0mm <sup>2</sup>	N/A
D06		630V / 76A	9	0.75~16.0mm <sup>2</sup>	N/A
D03		800V / 25A	(One row)8 (Two row)24	0.34~4.0mm <sup>2</sup>	N/A
D02		800V / 20A	(One row)10 (Two row)20	0.34~2.5mm <sup>2</sup>	N/A
WA0	Cage Clamp type	1000V / 100A	10	6~35mm <sup>2</sup>	23mm
W16		800V / 50A	14	Solid conductor :0.5~16mm <sup>2</sup> Solid conductor, push-in termination :6~16mm <sup>2</sup> Fine-stranded conductor :0.5~25mm <sup>2</sup>	18~20mm
W10		800V / 40A	14	Solid conductor :0.5~16mm <sup>2</sup> Solid conductor, push-in termination :4~16mm <sup>2</sup> Fine-stranded conductor :0.5~16mm <sup>2</sup>	17~19mm
W06		800V / 30A	18	Solid conductor :0.5~10mm <sup>2</sup> Solid conductor, push-in termination :2.5~10mm <sup>2</sup> Fine-stranded conductor :0.5~10mm <sup>2</sup>	13~15mm
W04		800V / 20A	(One row)20 (Two row)40	Solid conductor :0.5~6mm <sup>2</sup> Solid conductor, push-in termination :1~6mm <sup>2</sup> Fine-stranded conductor :0.5~6mm <sup>2</sup>	11~13mm

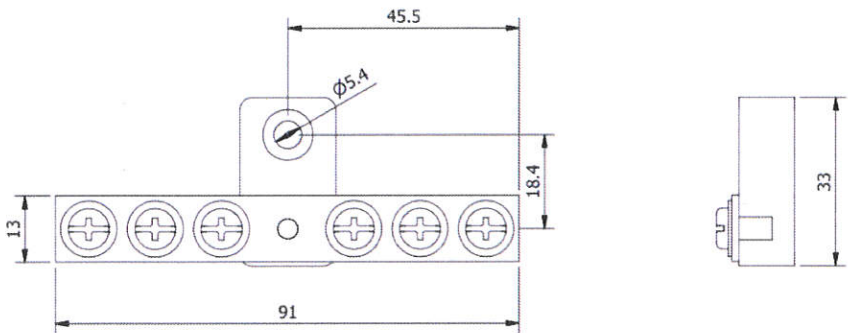
\*The maximum quantity of terminal blocks of customized models shall not exceed Table 3.



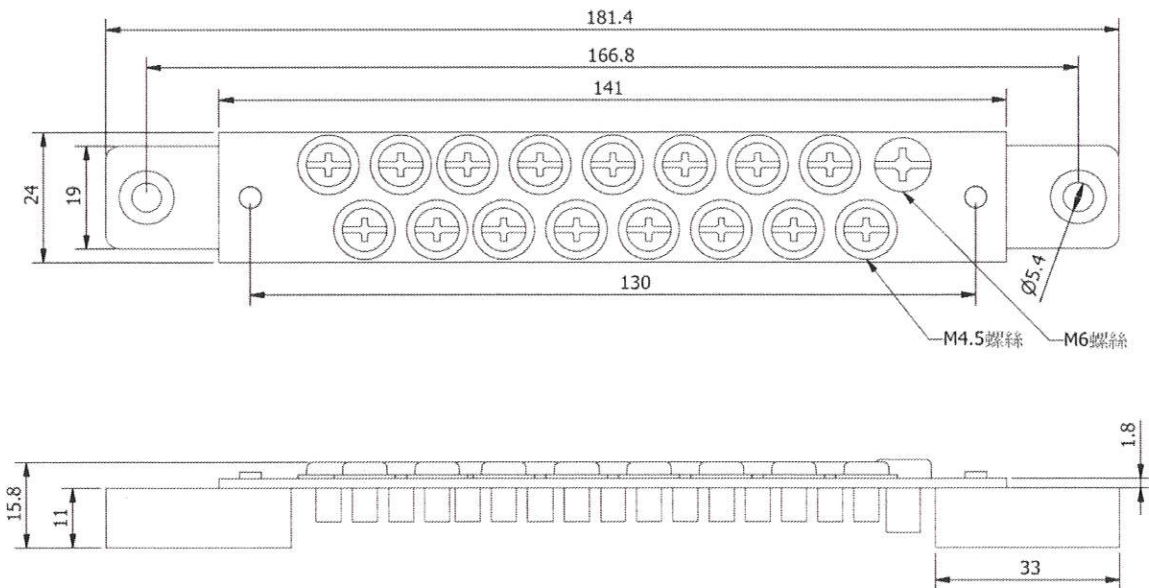
6.2.2 Specification of Ground Terminal Plate (Only available for customize models)



Quantity of Pole : 6P(M4.5 screw\*6) ,Rated Current : 20A



Quantity of Pole : 16P(M4.5 screw\*16) ,Rated Current : 30A





### 6.2.3 Conductor termination

#### Screw type

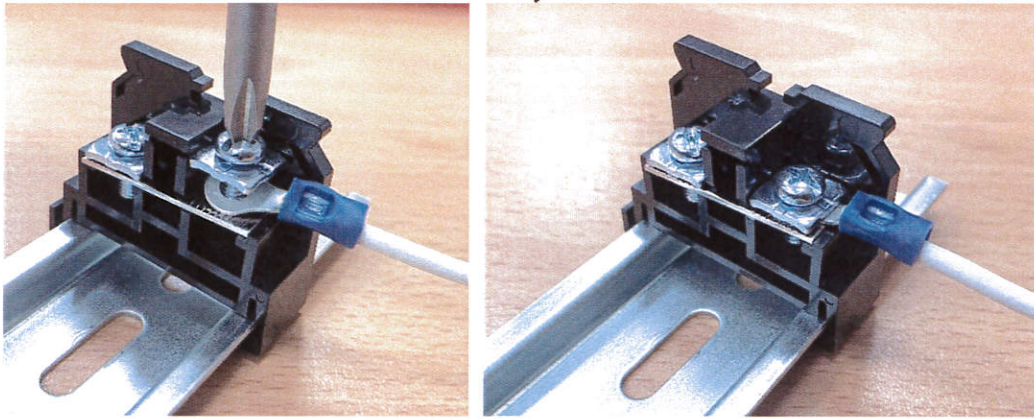
- ☞ Select Ring Terminal or Fork Terminal.



- ☞ Insert the stripped wire into the terminal and compress.

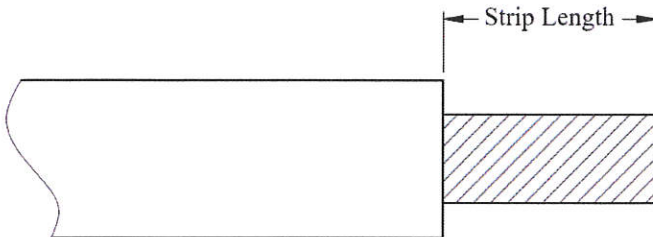


- ☞ Fix the terminal on the terminal block by the screw and make sure the screw is wrench tight.

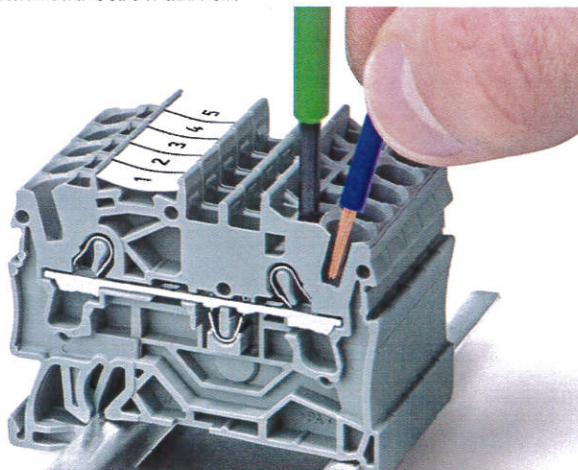


#### Cage Clamp type

- ☞ Wire Strip Length, please see Table 3.



- ☞ Use the flathead screwdriver to compress the spring. Then insert the wire into the terminal. Release the flathead screwdriver.





## 6.2.4 Earth ground

### Internal earth ground

- ☞ Install in the internal ground hole or Ground Terminal Plate.
- ☞ Internal ground hole size: M5,torque: 14.5 kgf-cm. (Figure 2)
- ☞ Ground Terminal Plate specification please see 6.2.2.
- ☞ Terminal type as show the Figure 1.
- ☞ Protective earthing (PE) conductor connection facilities shall allow for the effective connection of at least one conductor with a cross-sectional area given in Table 4.

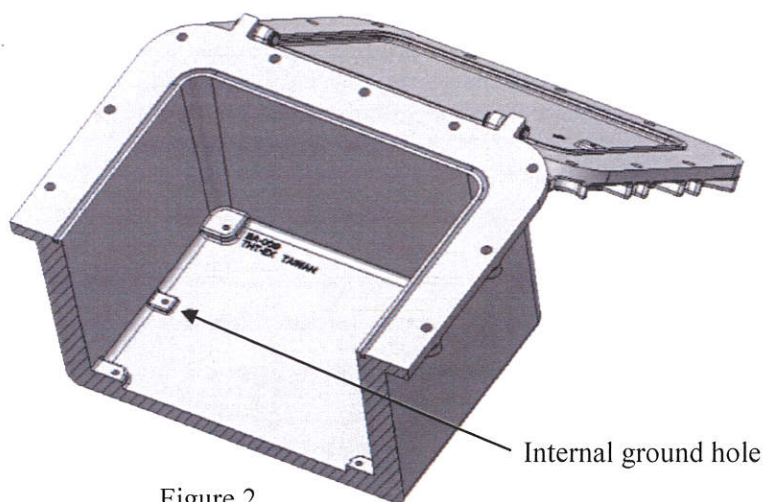


Figure 2



Figure 1

Table 4 – Minimum cross-sectional area of PE conductors

Cross-sectional area of phase conductors, $s$ mm <sup>2</sup>	Minimum cross-sectional area of the corresponding PE conductor, $s_p$ mm <sup>2</sup>
$s \leq 16$	$s$
$16 < s \leq 35$	16
$s > 35$	$0,5 s$

### External earth ground

- ☞ Equipotential bonding connection facilities on the outside of electrical equipment shall provide effective connection of a conductor with a cross-sectional area of at least 4 mm<sup>2</sup>. When this connection facility is also intended to serve as the PE connection, the requirements of Table 4 apply.
- ☞ External ground hole size: M5,torque: 14.5 kgf-cm. (Figure 3)
- ☞ Terminal type as show the Figure 1.

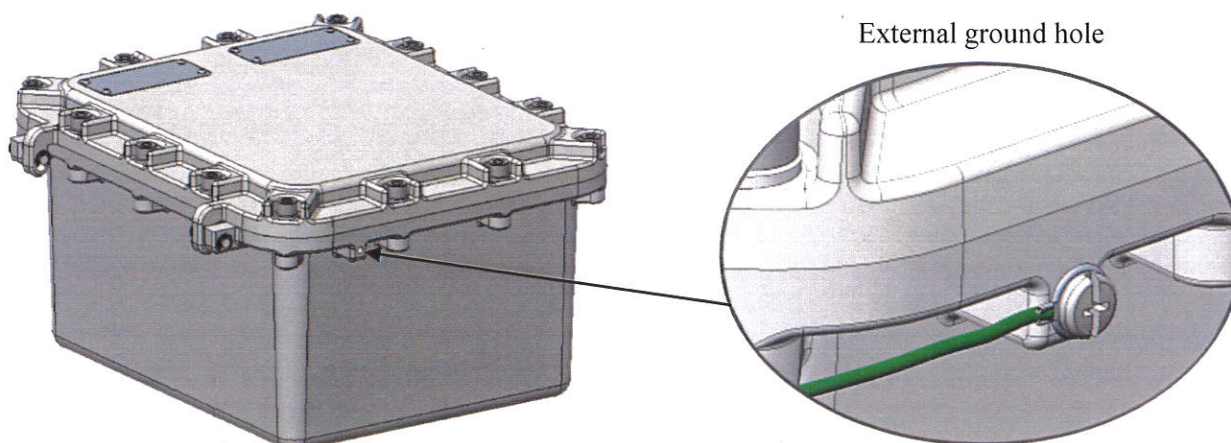


Figure 3

## 6.3 Mounting Bracket Installation

### 6.3.1 Wall Mounting Bracket

- ☞ The mount bracket is for the use Wall mount (Figure 2)
- ☞ Position the bracket holders and fix it by means of the provided M8 screws, 61.0 kgf-cm.
- ☞ Secure the Wall mounting bracket to the structure by using four fasteners (not provided).

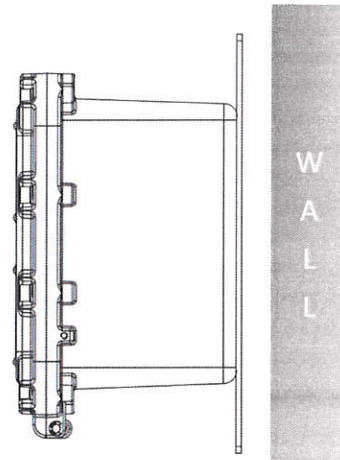


Figure 2

### 6.4 Putting into Service

Before putting into operating, it's necessary to ensure that:

- ☞ The Junction box is correctly installed.
- ☞ The connection has been correctly made.
- ☞ The cable has been inserted correctly.
- ☞ The voltage/current is correctly.



## 7. Maintenance

### WARNING

- ▶ To avoid dangers due to energized parts, all connections and wiring must be disconnected from the power supply. Secure the connections against unauthorized activation.
- ▶ To avoid risk of burn to hands, let the housing, the cable gland cool down for approximate 30 minutes before touching them.
- ▶ Maintenance work is not permitted on flameproof enclosures. Repairs are only to be carried out by the manufacturer. Unauthorized repair shall cause the manufacturer's liability and warranty expires.

### Regular Maintenance

- ☞ Consult the relevant national regulations (e.g. IEC 60079-17) to determine the type and extent of inspections.
- ☞ Arrange the plan of regular inspection with the equipment, one time per 3-month at least, so that any defects in the equipment which may be anticipated are promptly detected.

To check as part of the maintenance schedule as following:

- ☞ Cracks or damages on the enclosure.
- ☞ Condition of the connecting cables.
- ☞ Screws of the mounting bracket are tightened.

## 8. Accessories and Spare Parts

### WARNING

Use only original THT-EX accessories and spare parts. For accessories and spare parts, see data sheet at [www.tht-ex.com](http://www.tht-ex.com).

## 9. Transport, Storage and Disposal

- ☞ Transport and storage is only allowed in the original packaging, on the way pointed out on the carton box.
- ☞ Transport – Shock-free in its original carton, do not drop, and handle carefully.
- ☞ Store – Store in a dry place in its original packaging.
- ☞ Disposal – Ensure environmentally friendly disposal of all components according to the legal regulations.