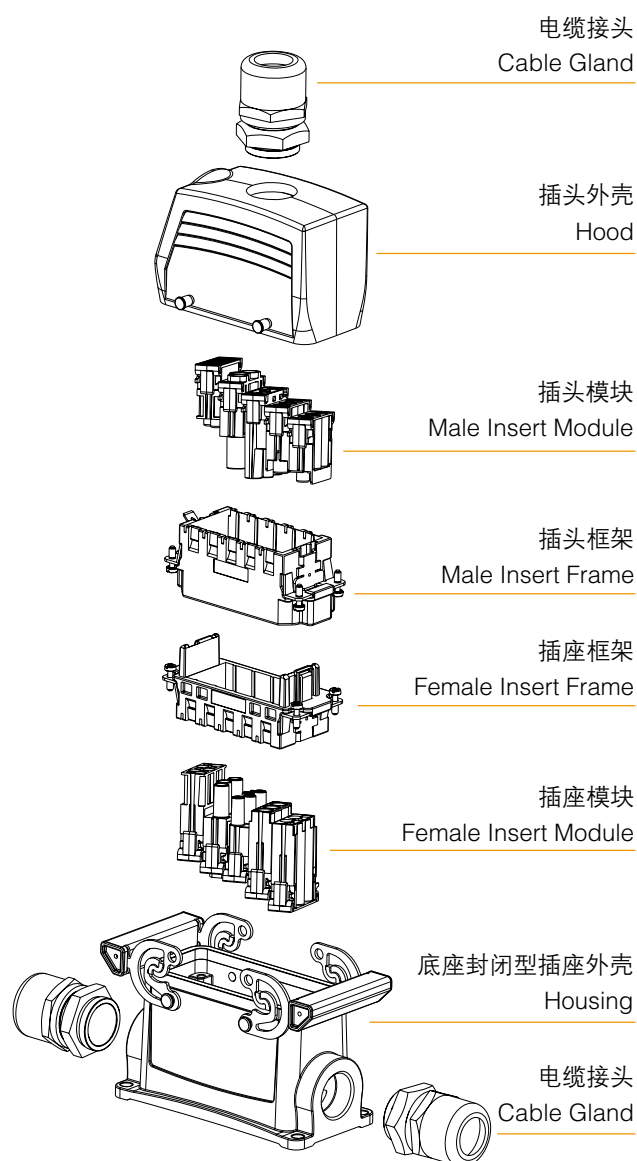


# 重载连接器

## General overview of heavy duty connectors

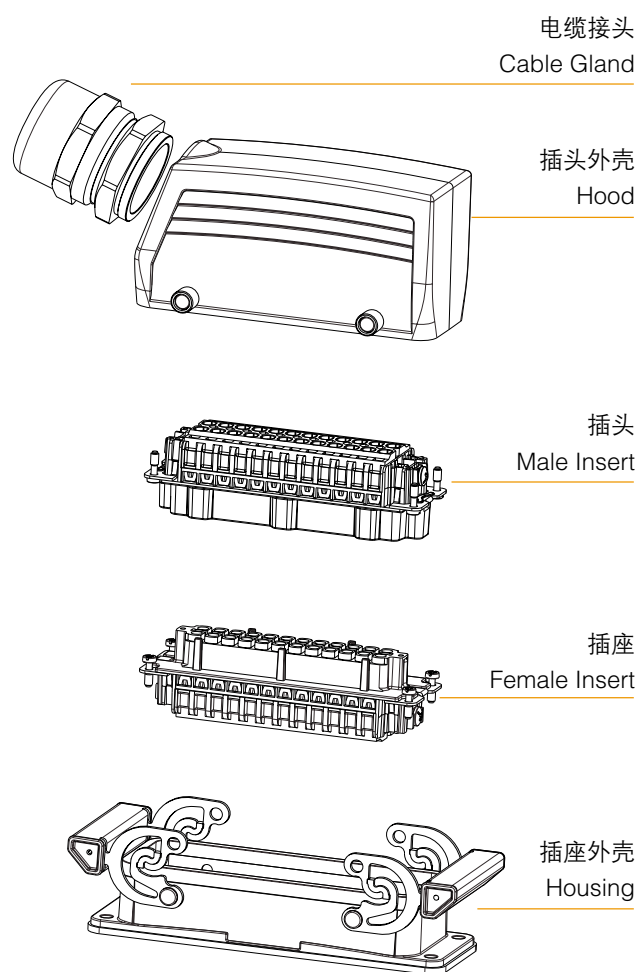
### 重载连接器 – 模块插芯结构

Heavy duty connectors–module insert



### 重载连接器 – 普通插芯

Heavy duty connectors–general insert



## 概述 General features

重载接插件主要用于不同设备或功能单元之间的电气或信号连接，其为复杂控制设备的安装和维护提供了极大的便利。

Heavy duty connector is suitable for use with alternate or direct connection, it provides lots of facilities for installation and maintenance in complex machinery.

## 接插体 Inserts

重载接插体的基本结构件有：

I. 接插体 II. 防护安装外壳 III. 连接附件

Heavy duty connector includes three elements; inserts, hood/housing and accessories.

通常可使用的最大工作温度为 125℃。但采用 PPS 经过特殊处理之后其可耐受外界温度可达 180℃，不同的接插体其导电接线端子采用的接线方式大致有：螺钉压接，冷压压接，弹片压接等。

Normally used for applications in a maximum ambience temperature of 125℃. The special versions for use with a maximum ambience temperature of 180℃ are made of PPS. Different conductor connection techniques are available, screw connection, crimp connection or cage clamp connection.

## 在选择套件时，需确定

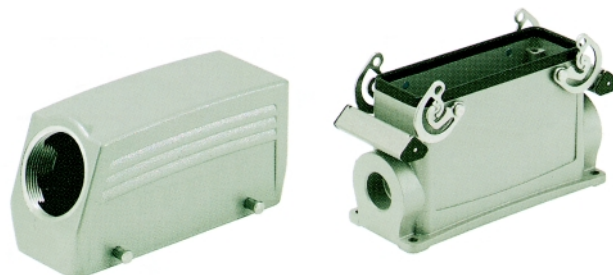
When choose a complete connector components, you should select from the following sub headings

额定电流 Working current

额定电压 Working voltage

回路数 Control poles

外壳形式及安装尺寸 Hoods and housings style



## 安装外壳 Enclosures

防护安装外壳通常选用铸铝材料，外壳表面经过粉末镀层或可自熄灭的热塑材料（特殊系列）处理，使其可以抵御撞击或机械压力。同样外壳之间的密封件可使接插件外壳的防护等级达 IP65。

The enclosures are made in die cast aluminum alloy with a coating of epoxy-polyester powder or self-extinguishing thermo plastic (Special series). There are resistant to impacts and strong mechanical stress. Sealing is assured by special gaskets that protect the contact groups inside the enclosures against dust and aggressive agents. In general, the coupled enclosures with the appropriate connections guarantee an IP65 degree of protection.

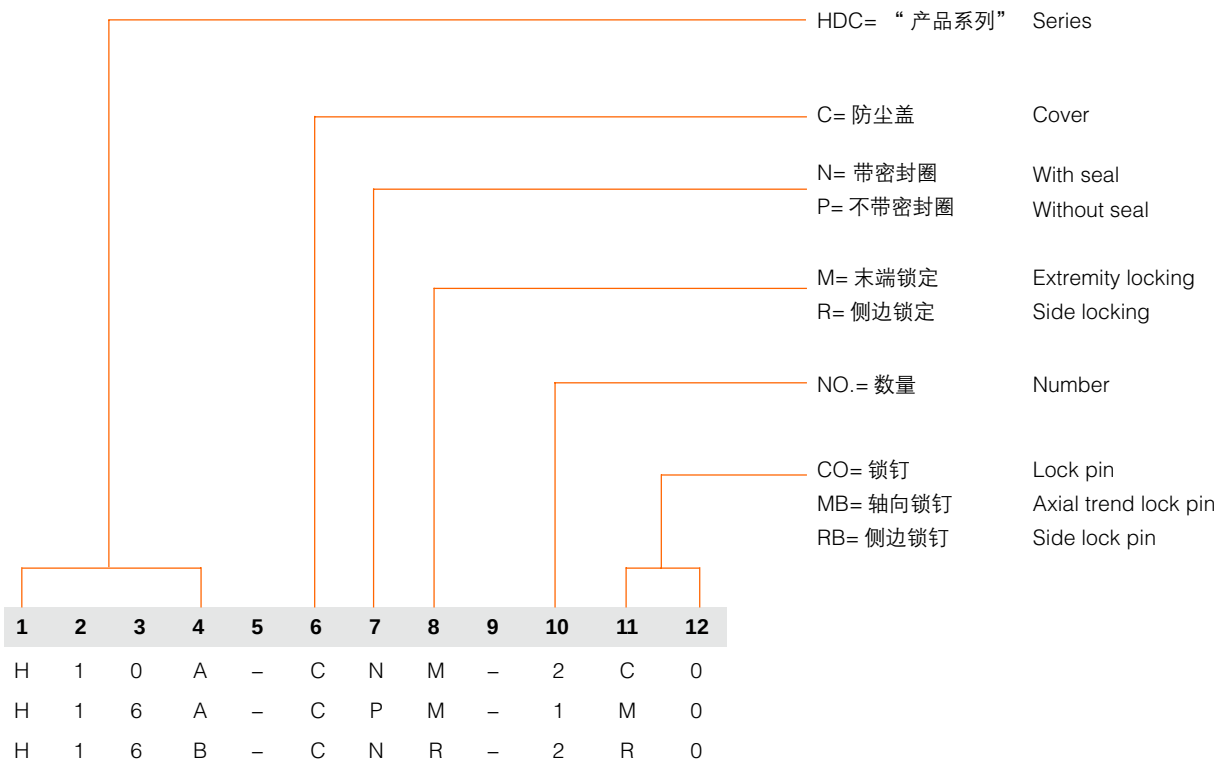
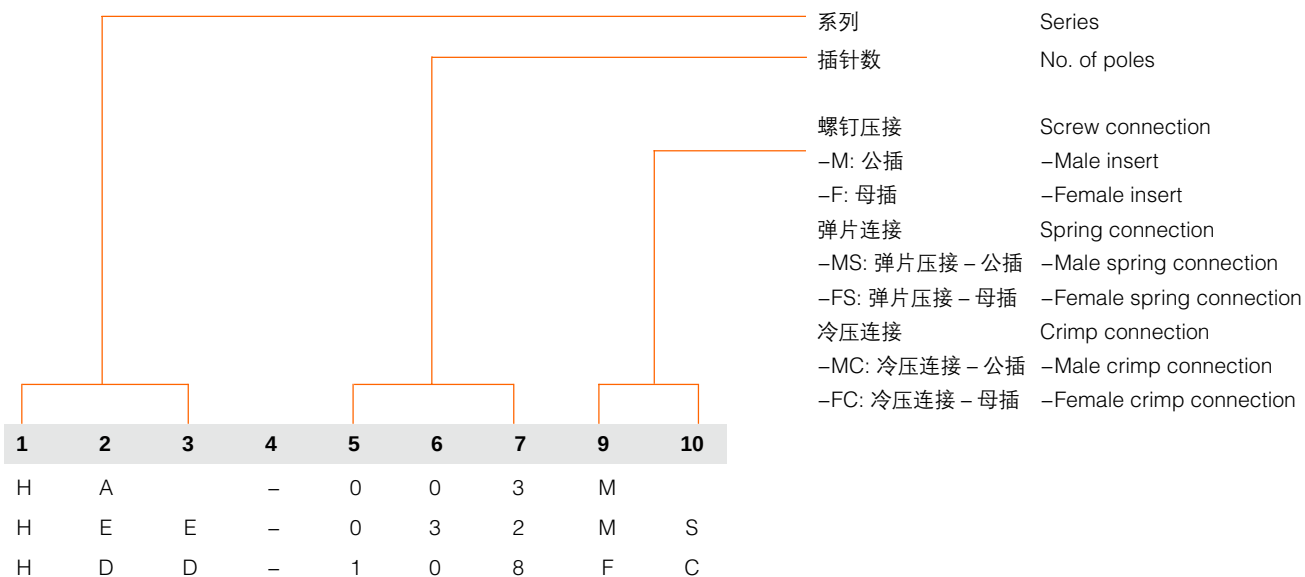
## 客户定制 Customized design

针对客户的具体使用需求，我司也可提供特殊的开发及定制，具体问题可咨询。

For customer's special requirement, we can provide customized design, please contact us.

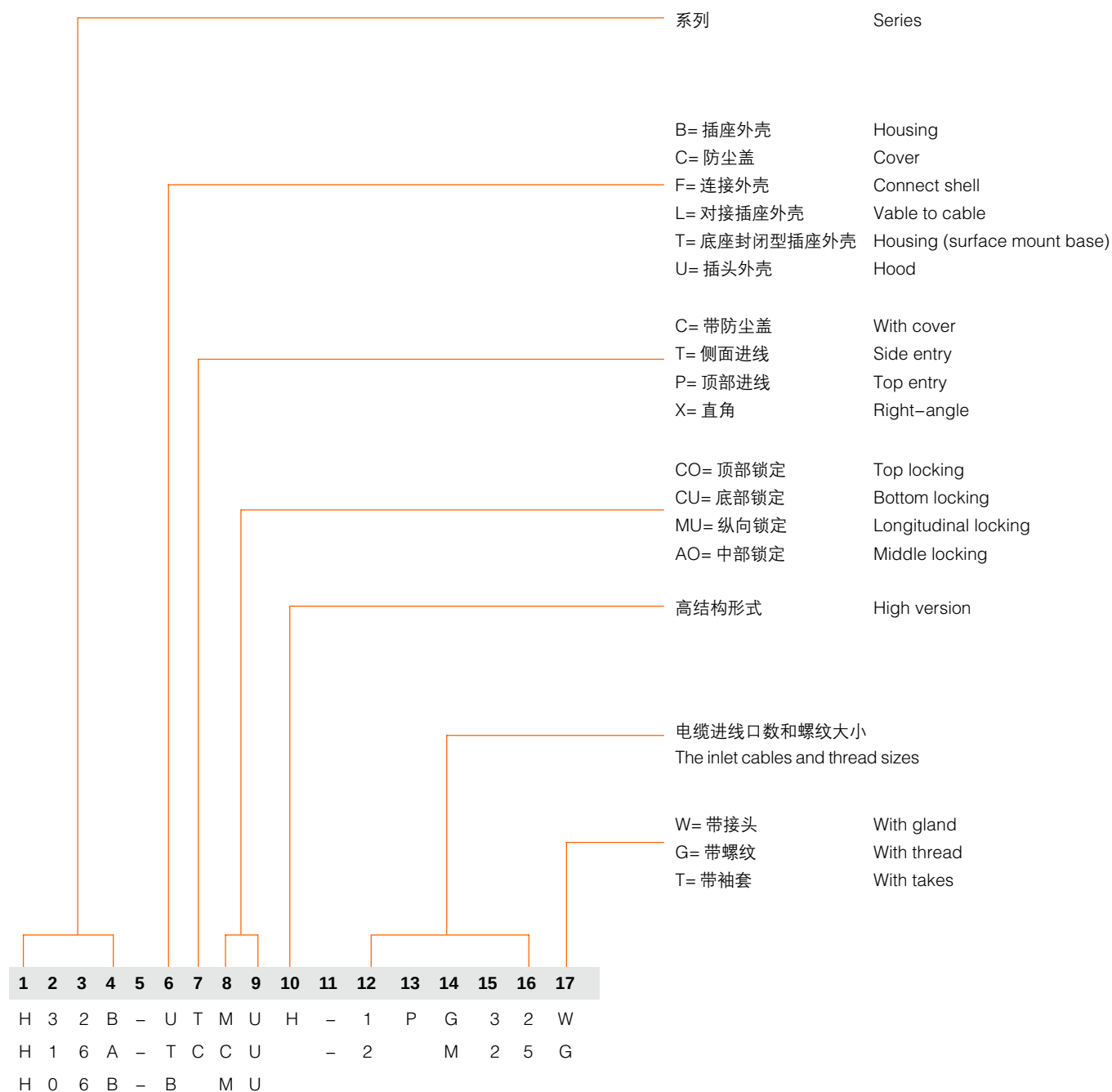
# 插芯和防尘盖编码说明

Explain for the part number



# 外壳编码说明

Explain for the hood and housing



# 接线端子类型

## Terminal type

### 螺钉压接端子 Screw terminal

螺钉接线端子其尺寸测试拧紧力矩等数据详见表格。

Screw terminals dimensions and tightening torques for testing are shown opposite.

螺钉接线端子可以分为带压线保护和不带压线保护两种：

Te relevant regulations state that in the case of

#### ① 带压线保护的接线端子

Terminals with wire protection

不需使用管状压线端头，HE、HSB、HAVE 等系列接插件均为此类型。

No special preparation of the conductor is required, the use of ferrules is not necessary, series HE, HSB, HAVE

#### ② 不需压线保护的接线端子

Terminals without wire protection

必须使用管状压线端头，HA 系列接插件为此类型。

The insulation is first stripped and then a wire ferrule must be used. Series HA.

### 冷压接线方式 Crimp connection

连接的气密性是良好连接的保证。同时在压接导线时选用合适的剥线长度及压接工具也是一个重要因素。在这些基本条件具备之后，用户应该可以确保可靠的压接和较低的接插电阻，同时也具有较高的抗腐蚀能力。

A perfect crimp connection is gastight, therefore corrosion free and amounts to a cold weld of the parts being connected. Wires to be connected must be carefully matched with the correct size of crimp contacts. If these basic requirements are met, users will be assured of highly reliable connections with low contact resistance and high resistance to corrosive attack.

### 弹片压接端子 Cage-clamp terminal

此类接线方式对导线压接前的准备要求不高并且不需特殊安装工具，可极大的降低安装成本，弹片的机械性能好。

This termination method requires very little preparation of the wire and no special tools, leading to a low installed cost and a high degree of mechanical security.

#### ① 适用于所有标准及截面在 0.14 to 2.5mm<sup>2</sup> 的单股导线。

For all stranded and solid wires with a cross section 0.14 to 2.5mm<sup>2</sup>

#### ② 接线方便，导线和螺丝刀可以在同一平面操作。

Ease of termination. Conductor and screwdriver are in same plane.

#### ③ 对剥皮导线没有特殊的要求。

No special preparation of stripped conductor.

导线更大，压紧力也越大

The larger the conductor the higher the clamping force.

端子具有防震保护设计

The termination is vibration-proof.

接触电阻低

Guaranteed constant low resistance connection of the cageclamp terminal.

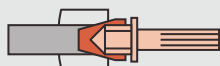
### 螺钉尺寸及对应拧紧力矩

Screw dimensions and tightening torque for screw terminals

| 线规<br>Wire gauge(mm <sup>2</sup> )         | 1.5 | 2.5 | 4    | 6   | 10  | 16  |
|--------------------------------------------|-----|-----|------|-----|-----|-----|
| 螺钉类型<br>Screw thread                       | M3  | M3  | M3.5 | M4  | M4  | M6  |
| 测试力矩<br>Test moment of torque(Nm)          | 0.5 | 0.5 | 0.8  | 1.2 | 1.2 | 1.2 |
| 最小拔出力<br>min.pull-out for stranded wire(N) | 40  | 50  | 60   | 80  | 90  | 100 |

## 螺钉压接形式 Screw terminal

HA series  
HE series  
HSB series  
HK series  
HEAV series



| 接插芯<br>Inserts | 最大线规<br>max.wire gauge |     | 剥线长度<br>Stripping length |
|----------------|------------------------|-----|--------------------------|
|                | (mm <sup>2</sup> )     | AWG | L(mm <sup>2</sup> )      |
| HA-003, HA-004 | 2.5                    | 14  | 4.5                      |
| HE, HA, HEAV   | 2.5                    | 14  | 7.5                      |
| HE             | 4.0                    | 12  | 7.5                      |
| HSB            | 6.0                    | 10  | 11.5                     |
| HK             | 16.0                   | 5   | 14.0                     |

## 冷压针压接形式 Crimp terminal

HD series  
HDD series  
HM series(10A)  
HEE series  
HM series(16A)

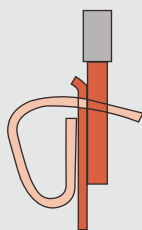


| 接插芯<br>Inserts       | 线规<br>wire gauge   |     | 剥线长度 Stripping length<br>L(mm <sup>2</sup> ) |         |
|----------------------|--------------------|-----|----------------------------------------------|---------|
|                      | (mm <sup>2</sup> ) | AWG | HDD/HD                                       | HEC/HAC |
| HD<br>HDD<br>HM(10A) | 0.5                | 20  | 8.0                                          | 7.5     |
|                      | 0.75               | 18  | 8.0                                          | 7.5     |
|                      | 1.0                | 18  | 8.0                                          | 7.5     |
|                      | 1.5                | 16  | 8.0                                          | 7.5     |
|                      | 2.5                | 14  | 8.0                                          | 7.5     |
|                      | 4.0                | 12  | -                                            | 7.5     |

| 接插芯<br>Inserts | 线规<br>wire gauge   |     | 剥线长度 Stripping length<br>L(mm <sup>2</sup> ) |
|----------------|--------------------|-----|----------------------------------------------|
|                | (mm <sup>2</sup> ) | AWG | HEE/HA(16A)                                  |
| HEE<br>HM(16A) | 0.5                | 20  | 7.5                                          |
|                | 0.75               | 18  | 7.5                                          |
|                | 1.0                | 18  | 7.5                                          |
|                | 1.5                | 16  | 7.5                                          |
|                | 2.5                | 14  | 7.5                                          |
|                | 4.0                | 12  | 7.5                                          |

## 弹片压接端子 Cage-clamp terminal

HES series  
HEAVS series



| 接插芯<br>Inserts | 最大线规<br>max.wire gauge |       | 剥线长度<br>Stripping length |
|----------------|------------------------|-------|--------------------------|
|                | (mm <sup>2</sup> )     | AWG   | L(mm <sup>2</sup> )      |
| HES, HEAVS     | 0.14-2.5               | 26-14 | 9...11                   |

## 建议使用拧紧力矩和螺丝刀的尺寸 Recommended tightening torque and size of screw driver

| 螺钉尺寸<br>Size of screw | 接插件类型<br>Connector type                                                                           | 拧紧力矩(ø)<br>Tightening torque [ Nm ] | 拧紧力矩(ø)<br>Tightening torque [ lbft ] | 建议使用螺丝刀尺<br>Recommended size of screw driver |
|-----------------------|---------------------------------------------------------------------------------------------------|-------------------------------------|---------------------------------------|----------------------------------------------|
| M3                    | 螺钉端子<br>Screw terminal HA-003/HA-004/HQ-005                                                       | 0.25                                | 0.20                                  | 0.4 x 2.5                                    |
| M3                    | 螺钉端子<br>Screw terminal HA-010, HA-016                                                             | 0.50                                | 0.40                                  | 0.5 x 3.5<br>or ± size 1                     |
| M3                    | 螺钉端子 HE,HVAE 定位及固定用<br>Screw terminal HE,HVAE fixing screws of all kinds, guiding pins and bushes | 0.50                                | 0.40                                  | 0.5 x 3.5                                    |
| M4                    | 接地端子螺钉 HA,HE,HD,HDD<br>Ground terminal HA,HE,HD,HDD                                               | 1.20                                | 0.90                                  | 0.5 x 3.2<br>or ± size 1+2                   |
| M4                    | 端子块 HSB<br>Terminal blocks HSB                                                                    | 1.20                                | 0.90                                  | 0.8 x 4.5                                    |
| M5                    | 接地端子螺钉 HSB<br>Ground terminal HSB                                                                 | 2.00                                | 1.40                                  | 0.8 x 4.5<br>1.2 x 8                         |

# IP 防护等级

## Protection Level

I P 6 5

第二位数：防液体侵入级别

Second number (Protection against liquids)

第一位数：防固体侵入级别

First number (Protection against solid objects)

第一位数：防固体物侵入的级别

First number (Protection against solid objects)

数字 Number

|   |  |                                                                                                             |
|---|--|-------------------------------------------------------------------------------------------------------------|
| 0 |  | 无防护<br>No protection                                                                                        |
| 1 |  | 防护大于 50mm 的物体(如手背)<br>Protected against solids objects over 50mm (e.g. accidental touch by hands)           |
| 2 |  | 防护大于 12.5mm 的物体(如手指)<br>Protected against solids objects over 12mm (e.g. fingers)                           |
| 3 |  | 防护大于 2.5mm 的物体<br>(如工具或导线)<br>Protected against solids objects over 2.5mm (e.g. tools and wires)            |
| 4 |  | 防护大于 1.0mm 的物体<br>(如导线或细棍)<br>Protected against solids objects over 1mm (e.g. tools, wires and small wires) |
| 5 |  | 防护足以造成危害的粉尘侵入<br>Protected against dust – limited ingress (no harmful deposit)                              |
| 6 |  | 粉尘无法侵入<br>Totally protected against dust                                                                    |

第二位数：防液体侵入级别

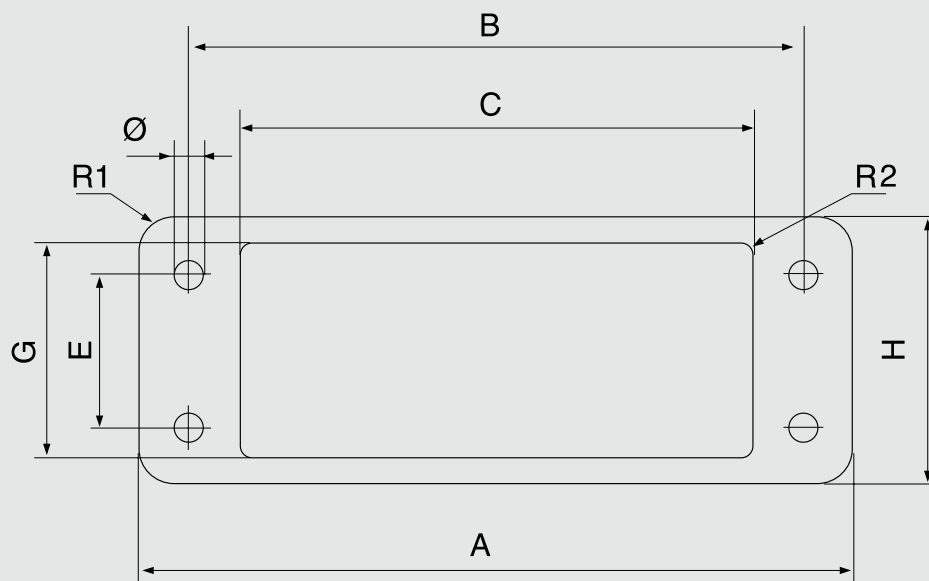
Second number (Protection against liquids)

数字 Number

|   |  |                                                                                                                                 |
|---|--|---------------------------------------------------------------------------------------------------------------------------------|
| 0 |  | 无防护<br>No protection                                                                                                            |
| 1 |  | 防护垂直滴水(如凝结液)<br>Protected against vertically falling drops of water                                                             |
| 2 |  | 防护下滴倾斜角度小于 15 度的滴水<br>Protected against direct sprays up to 15° from the vertical                                               |
| 3 |  | 防护下滴倾斜角度小于 60 度的滴水<br>Protected against direct sprays up to 60° from the vertical                                               |
| 4 |  | 防护来自各个方向的贱水<br>Protected against sprays from all directions – limited ingress permitted                                         |
| 5 |  | 防护来自各个方向的喷水<br>Protected against low pressure jets if water from all directions – limited ingress permitted                     |
| 6 |  | 防护水塘或高喷水柱<br>Protected against strong jets of water e.g. for use on shipdecks – limited ingress permitted                       |
| 7 |  | 埋于水中 150mm~1m 深，防止水的侵入<br>Protected against the effects of temporary immersion between 15cm and 1m. Duration of test 30 minutes |
| 8 |  | 埋于水中，适合长时间浸入水中<br>Protected against long periods of immersion under pressure                                                    |

# HDC 穿体式外壳开孔尺寸一览表

## Housings mounting dimensions



| 螺钉尺寸<br>Size of screw | HDC 尺寸<br>Size | 开孔尺寸(mm)Dimensions |     |      |     |      |      |     |      |     |
|-----------------------|----------------|--------------------|-----|------|-----|------|------|-----|------|-----|
|                       |                | A                  | B   | C    | Ø   | E    | G    | H   | R1   | R2  |
| H3A                   | 1              | 40                 | 30  | 21.4 | 3.3 | —    | 24.4 | 28  | —    | —   |
| H10A                  | 2              | 82                 | 70  | 58   | 3.4 | 17.5 | 24.5 | 31  | 5.25 | 2.5 |
| H06B                  | 3              | 80                 | 70  | 53   | 4.5 | 32   | 36   | 45  | 5.25 | 4   |
| H10B                  | 4              | 93                 | 83  | 66   | 4.5 | 17.5 | 36   | 45  | 5.25 | 4   |
| H16A                  | 5              | 96                 | 86  | 74   | 3.4 | 17.5 | 24.5 | 31  | 5.25 | 2.5 |
| H16B                  | 6              | 113                | 103 | 86.3 | 4.5 | 32   | 36   | 45  | 5.25 | 4   |
| H32A                  | 7              | 58.5               | 49  | 42   | 1.5 | 75   | 92   | 102 | 5.25 | 4   |
| H24B                  | 8              | 141                | 130 | 113  | 4.5 | 32   | 36   | 45  | 5.25 | 4   |
| H48A                  | 9              | 124.6              | 110 | 87   | 5.5 | 87   | 75.5 | 65  | 5.56 | 4   |
| H32A                  | 10             | 124.6              | 110 | 87   | 6.5 | 87   | 75.5 | 65  | 5.56 | 4   |
| H48A                  | 12             | 165.7              | 148 | 123  | 7   | 94.7 | 81   | 70  | 7.86 | 8   |