



# 規格書

## SPECIFICATION

客 戶 Customer: \_\_\_\_\_

客戶料號 Customer Part Number: \_\_\_\_\_

產品型號 Product Part Number: \_\_\_\_\_ FM-HL3012-\*

產品名稱 Product Name: \_\_\_\_\_ 霍爾流量計

發行日期 Issue Date: \_\_\_\_\_ 2017-03-23

規格書版本 Specification Version: \_\_\_\_\_ C

### 客戶確認/Customer Confirm and sign

| 批准 /APPROVED BY | 核准 /CHECKED BY | 檢驗 /INSPECTED BY |
|-----------------|----------------|------------------|
|                 |                |                  |

### 能點確認/EPT Confirm and sign

| 批准 /APPROVED BY   | 核准 /CHECKED BY  | 製作 /DRAWN BY  |
|---|---|---|
|  |  |  |



## 特別說明:

工廠生產測試採用定量 500ml/每分鐘狀態進行 400 脈衝計量測試，測試結果分為如下 4 類:

A 類範圍 190ml-196ml 誤差  $\pm 1.5\%$

B 類範圍 188ml-200ml 誤差  $\pm 3.0\%$

C 類範圍 184ml-206ml 誤差  $\pm 5.5\%$

D 類範圍 180ml-210ml 誤差  $\pm 7.5\%$

請客戶根據精度需求挑選合適的產品使用

FM-3012-A A 類 FM-3012-B B 類

FM-3012-C C 類 FM-3012-D D 類



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## 2. 應用領域/Application

飲水機/ Water dispenser  
 熱水器/Water heater  
 咖啡機/Coffee maker  
 小流量控制應用/ Small flow control needed appliances.

## 3. 產品特徵/Product features

每分鐘最大流速<760ml  
 Maximum flow <760ml  
 体积小,成本低  
 Small in size and low in cost  
 流量精度高,可靠性好,壽命長  
 High flow accuracy and reliability and long operating time  
 質量輕,自身可供四方位組裝,安裝方便  
 light in weight, self-as semblance from four directions and easy to install  
 符合安規標準要求  
 Satisfying the requirements in Safety Standards  
 符合 RoHS 要求  
 The sensor itself satisfies RoHS requirements

## 4. 電氣參數特性/ Electrical Specification ( Ta=25°C )

| 參數//Parameter              | 符號/Symbol         | 典型值/Min | 極限值/limit | 單位/units |
|----------------------------|-------------------|---------|-----------|----------|
| 工作電壓/Supply Voltage        | Vs                | 5       | 20        | V        |
| 輸出電壓/Output Voltage        | V <sub>OUT</sub>  |         | 20        | v        |
| 輸出電流/Output Current        | I <sub>OUT</sub>  |         | 50        | mA       |
| 飽和電壓/Saturation Voltage    | V <sub>DSON</sub> |         | 0.4       | V        |
| 待機電流/Standby Current       | I <sub>S</sub>    |         | 5         | mA       |
| 工作溫度/Operating Temperature | T <sub>opr</sub>  | -5~+65  |           | °C       |
| 存儲溫度/Storage Temperature   | T <sub>stg</sub>  | -10~+70 |           | °C       |
| 工作壽命/Working Life          | Life              | 50000   |           | h        |

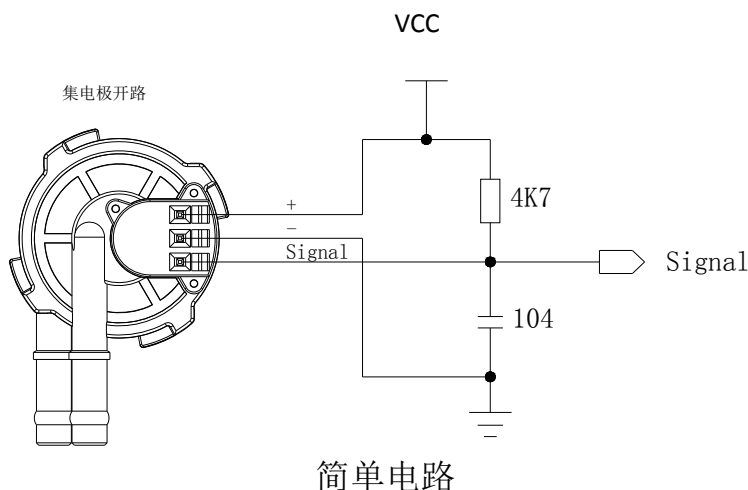
## 5. 應用及檢測/Application & Detection

|          |                           |                     |                          |
|----------|---------------------------|---------------------|--------------------------|
| 0°       | 1600                      | 0.475               | ±2%                      |
| 90°      | 1638                      | 0.463               |                          |
| 180°     | 1650                      | 0.460               |                          |
| 270°     | 1662                      | 0.457               |                          |
| 角度/Angle | 最大流量脈衝/分 Max Pulse/Minute | 最大脈衝流量/Max Flow (G) | 複測公差/ Repeated tolerance |

- 依據每分鐘760m0出水量測試計數/ Based on 760ml test of per minute.



## 6. 推薦應用電路/Recommended Application Circuit



## 7. 注意事項/Precautions

確保流體沒有快速的脈衝波動

Insure no fast pulse flucuations of the fluid.

確保沒有反向激增壓力

Insure no reverse surge pressure.

確保整個流道系統裡沒有空氣

Insure no air in the entire circulation system.

注意流量計的安裝位置

Notice the mounting position of the flowmeter.

最小/最大流量應在流量計線性範圍內

Min/max flow should be within the linear range of the flowmeter.

適當的時間間隔後應清洗系統

System should be cleaned after an appropriate time.

避免有電流衝擊

Avoid current impact.

聯接端子不可接錯，否則會損毀流量計

Misconnection to the joint terminal will damage the flowmeter.

不可在聯接端子上施加機械應力

No mechanical stress on the joint terminal.

不能有霧氣積聚在聯接端子上

No fog accumulation on joint terminals.

## 8. 包裝規格/Packing

30pcs /Tray , 10 Tary/ Box

## 9. 尺寸和推薦安裝/Outline Drawing and Recommended installation



1 2 3 4 5 6

A

A

B

B

C

C

D

D

E

E

F

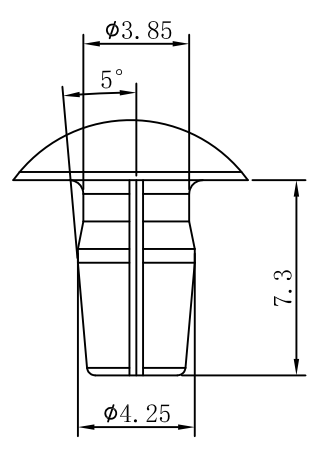
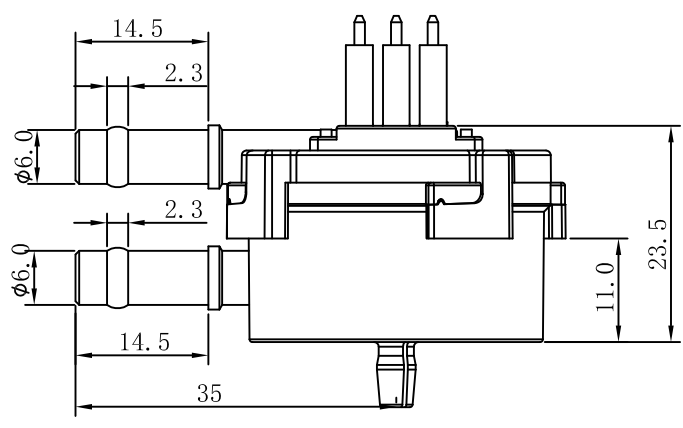
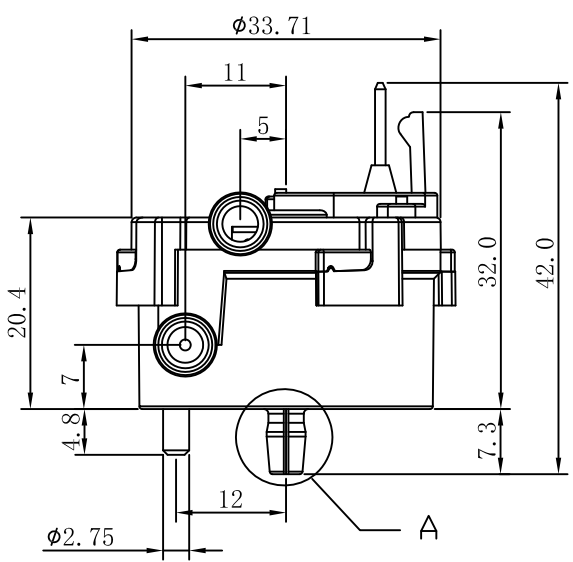
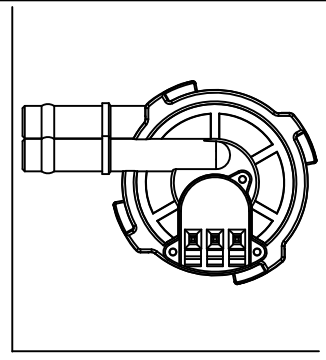
F

G

G

H

H



备注:

Remark: 所有尺寸单位均为mm

The unit for each dimension is mm.

未说明尺寸公差为 ±0.20mm

The tolerance for unindicted dimensions is ±0.20 mm

|                    |       |                |   |               |   |   |              |                 |          |
|--------------------|-------|----------------|---|---------------|---|---|--------------|-----------------|----------|
| 设计<br>Designer     | Baren | 材料<br>Material |   | 单位<br>Unit    | mm  |  <b>能点科技有限公司</b><br>EPT technology co., LTD |              |                 |          |
| 检查<br>Checked      | Baren | 表面处理<br>Finish |   | 比例<br>Scale   |   |   |              |                 |          |
| 审批<br>Approver     | Tommy | 数量<br>Quantity |   | 篇幅<br>Size    |   | 产品名<br>Product Name   | FM-HL3012產品圖 | 日期<br>Date      | 16-11-03 |
| 一般公差<br>Tolerances | 0-10  | ±0.25          |  | 备注<br>Remarks |   | 零件名<br>Part name  |              | 版本<br>REV       | B        |
|                    | 10-35 | ±0.35          |   | 视图<br>View    |  | 图号<br>DWG NO.   |              | 页数<br>Pages NO. | 0/0      |
| 35-70              | ±0.45 |                |   |               |   |   |              |                 |          |

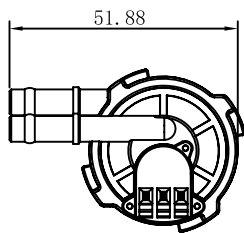
1 2 3 4 5 6

附页2

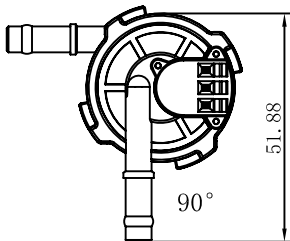
VACUUM PUMP  
SUCTION SIDE

FOR ACCURACY, FLOW METER  
SHOULD BE HORIZONTAL  
INSTALLED

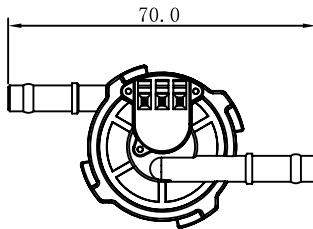
TANK



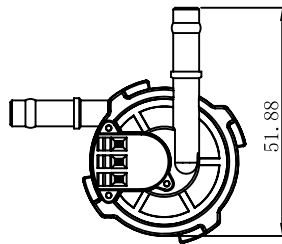
0°





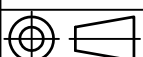
90°



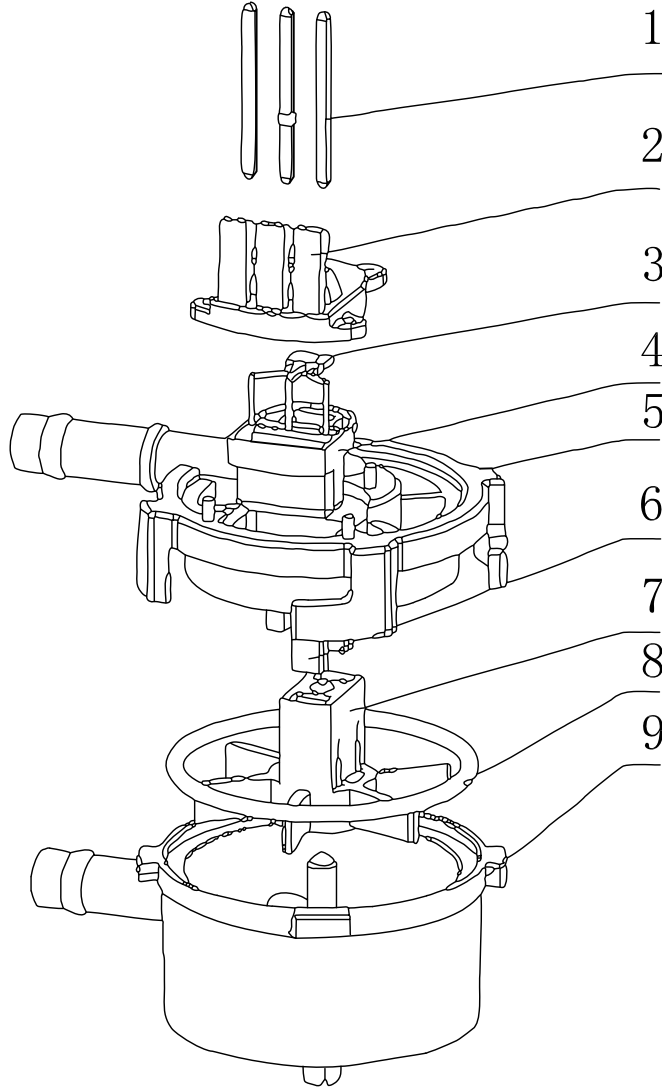
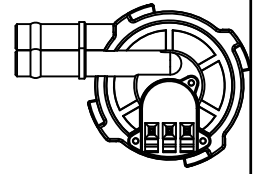
180°



270°

|                    |       |                |   |               |   |  |              |                 |          |
|--------------------|-------|----------------|---|---------------|---|--|--------------|-----------------|----------|
| 设计<br>Designer     | Baren | 材料<br>Material |   | 单位<br>Unit    | mm  |  <b>能点科技有限公司</b><br>EPT technology co., LTD |              |                 |          |
| 检查<br>Checked      | Baren | 表面处理<br>Finish |   | 比例<br>Scale   |   |  |              |                 |          |
| 审批<br>Approver     | Tommy | 数量<br>Quantity |   | 篇幅<br>Size    |   | 产品名<br>Product Name  | FM-HL3012安装图 | 日期<br>Date      | 16-11-03 |
| 一般公差<br>Tolerances | 0-10  | ±0.25          |  | 备注<br>Remarks |   | 零件名<br>Part name   |              | 版本<br>REV       | B        |
|                    | 10-35 | ±0.35          |   | 视图<br>View    |  | 图号<br>DWG NO.  |              | 页数<br>Pages NO. | 0/0      |
| 35-70              | ±0.45 |                |   |               |   |  |              |                 |          |

附页3



|           |                                      |           |            |
|-----------|--------------------------------------|-----------|------------|
| 9         | 主下盖<br>Main under cover              | 1         |            |
| 8         | 硅胶密封环<br>Silicone sealing ring       | 1         |            |
| 7         | 叶轮<br>Impeller                       | 1         |            |
| 6         | 钕磁铁<br>Neodymium magnet              | 2         |            |
| 5         | 主上盖<br>Main upper cover              | 1         |            |
| 4         | 霍尔元件下盖<br>Hall Component under cover | 1         |            |
| 3         | 霍尔元件<br>Hall Component               | 1         |            |
| 2         | 霍尔元件上盖<br>Hall Component cover       | 1         |            |
| 1         | 触针<br>contact pin                    | 1         |            |
| 编号<br>NO. | 名称<br>Name                           | 数量<br>QTY | 备注<br>P.S. |

|                    |       |                |     |               |    |
|--------------------|-------|----------------|-----|---------------|----|
| 设计<br>Designer     | Baren | 材料<br>Material |     | 单位<br>Unit    | mm |
| 检查<br>Checked      | Baren | 表面处理<br>Finish |     | 比例<br>Scale   |    |
| 审批<br>Approver     | Tommy | 数量<br>Quantity |     | 篇幅<br>Size    |    |
| 一般公差<br>Tolerances | 0-10  | ±0.25          | 0.8 | 备注<br>Remarks |    |
|                    | 10-35 | ±0.35          |     | 视图<br>View    |    |
|                    | 35-70 | ±0.45          |     |               |    |



**能点科技有限公司**  
EPT technology co., LTD

|                     |           |                 |          |
|---------------------|-----------|-----------------|----------|
| 产品名<br>Product Name | FM-HL3012 | 日期<br>Date      | 16-11-03 |
| 零件名<br>Part name    |           | 版本<br>REV       | B        |
| 图号<br>DWG NO.       |           | 页数<br>Pages NO. | 0/0      |



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