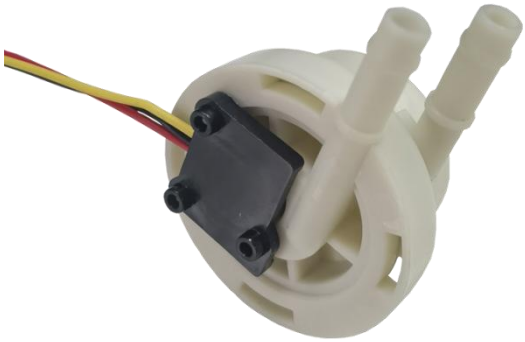
深圳市睿联传感科技有限公司

SHENZHEN REALUNION TECHNOLOGY CO., LTD.

SPECIFICATION

（产品规格书）



HF10PP05

霍尔流量传感器

(Hall Flow Sensor)

版本 Version：V1.2　　日期 Date：2024/12/23

- **修订记录 / Revision History**

No.	日期/Date	备注/Remark	修订/Revision
1	20240730	PP Version issue	V1.1
2	20241223	MP Version issue	V1.2

- **霍尔流量计原理 / Principle of Hall Flowmeter**

霍尔流量计是利用霍尔元件的霍尔效应来检测磁性涡轮从而计算流量/流速。当水通过涡轮开关壳推动磁性转子转动时，产生不同磁极的旋转磁场，切割磁感应线，产生高低脉冲电平。由于霍尔元件的输出脉冲信号频率与磁性转子的转速成正比，转子的转速又与水流量成正比

Hall flowmeter utilizes the Hall effect of Hall elements to detect magnetic turbines and calculate flow rate/velocity. When water passes through a vortex

When the wheel switch housing drives the magnetic rotor to rotate, it generates rotating magnetic fields with different magnetic poles, cutting the magnetic induction lines and producing high and low pulses Charge level. Due to the fact that the frequency of the output pulse signal of the Hall element is proportional to the rotational speed of the magnetic rotor, which in turn is proportional to The water flow rate is proportional

- **应用场景 / Application Scenarios**

1. 咖啡机/ Coffee Machine
   在咖啡机的出水口安装霍尔流量计，配合咖啡机内置的配方，当用户在选择口味后，按照配方进行出水量、出糖量、出奶量和出咖啡量进行控制。给用户更好的使用感受和口味选择多样化。
   Install a Hall flowmeter at the outlet of the coffee machine, combined with the built-in formula of the coffee machine. When the user selects a flavor, press Control the water output, sugar output, milk output, and coffee output according to the formula. Provide users with a better user experience and experience Diversified taste choices.
2. 果汁机/ Juicer
   进行果汁出量的控制
   Control the juice output
3. 热水器/ Heater

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在用户进行出热水的操作是，检测到出水口有流量变化，此时可以做断电保护
When the user performs hot water operation and detects a change in flow rate at the outlet, power-off protection can be implemented

4. 洗衣机/ Washing Machine
   在洗衣机加洗衣液的地方安装，用户使用不同模式，出洗衣液的多少可以调节
   Installed at the place where the washing machine is filled with laundry detergent, the amount of laundry detergent can be adjusted by the user using different modes
5. 饮水机/ Water Dispenser
   用于控制出水量
   Used to control the water output
6. 宠物喂食机/ Pet Feeding Machine
   可以定量进行宠物补水的控制
   Can quantitatively control pet hydration
7. ····需要计算流量或流速的产品
   Products that require flow or velocity calculation

● 产品优点 / Advantage

1. 食品级流量传感器，市面上流量传感器大多数磁性材料都是直接与液体接触的，而磁性材料大多为铷磁铁，这种材料会被氧化，氧化物掉入液体中对健康都是有害的。而我司的磁体与液体是直接隔离开来无接触。
   Food grade flow sensors. Most of the magnetic materials used in flow sensors on the market come into direct contact with liquids, and the magnetic materials are mostly rubidium magnets, which can be oxidized and harmful to health if the oxides fall into the liquid. And our magnets are directly isolated from the liquid without contact.
2. 安装方便，可以直接替代传统流量传感器
   Easy to install, can directly replace traditional flow sensors
3. 使用便捷，传感器的宽电压范围无需进行电压的转换
   Easy to use, the wide voltage range of the sensor does not require voltage conversion
4. 精度高
   High precision

● 选型表 / Selection Table

精度Precision / 孔径Aperture	A（±2%）	B（±3%）	C（±5%）
1.2MM	HF12PP05-A	HF12PP05-B	HF12PP05-C
1.0MM	HF10PP05-A	HF10PP05-B	HF10PP05-C
·	·	·	·
**MM	HF**PP05-A	HF**PP05-B	HF**PP05-C

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选型注意事项/ Selection Precautions：

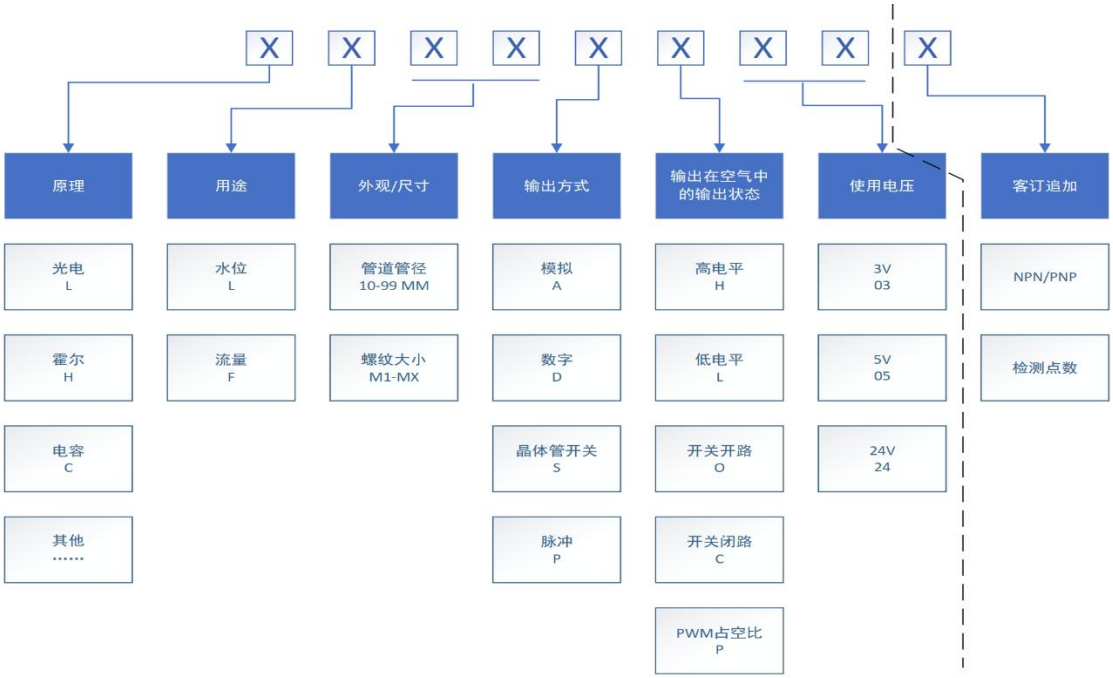
1. 当前管径1.2和1.0mm为常用型号，需要其他管径请与我司联系

   The current pipe diameters of 1.2 and 1.0mm are commonly used models. If you need other pipe diameters, please contact our company

2. 我司现有霍尔流量计均采用3-24V宽电压设计，使用时无需在电压上进行选型

   Our existing Hall flowmeters are designed with a wide voltage range of 3-24V, so there is no need to select the appropriate voltage when using them

命名规则：



- **转换表/ Transition Table**

管径 Nozzle	每升脉冲数 Pulses/Litre	每克脉冲数 g/pulse	每分钟最小流量 ML/min.flow	每分钟最大流量 max.flow ML /min	压力损失/Pressure loss
1.0mm	2499	0.4	80ML	400ML	0.15
1.2mm	2105	0.475	120ML	600ML	0.14
1.5mm	–	–	–	–	–
• • •	–	–	–	–	–

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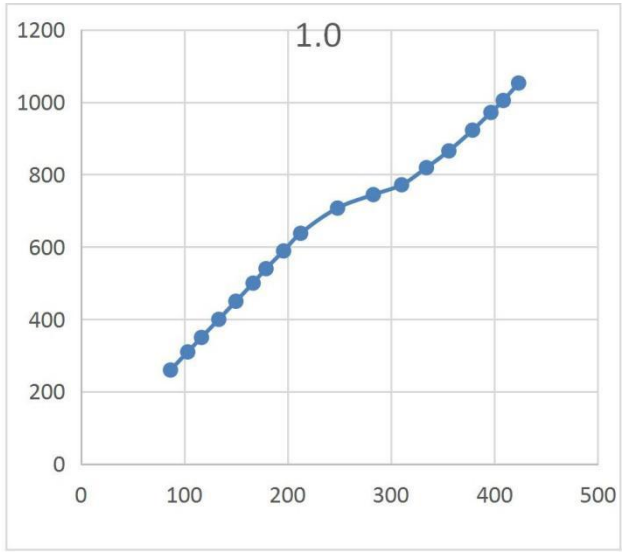
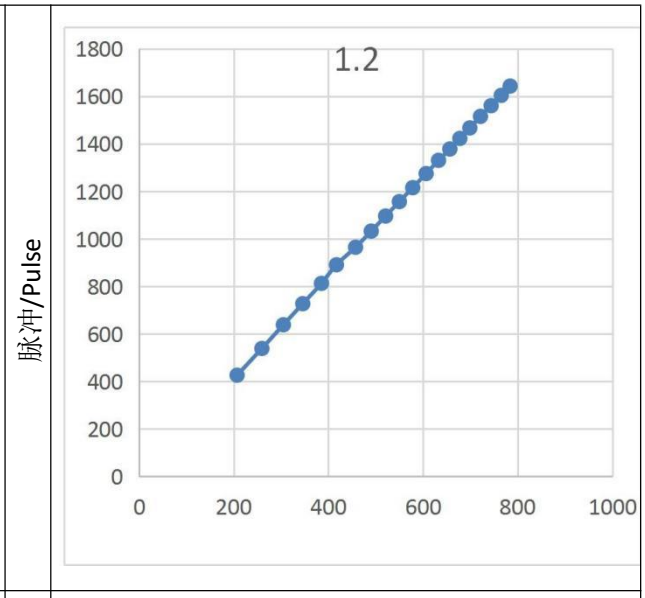
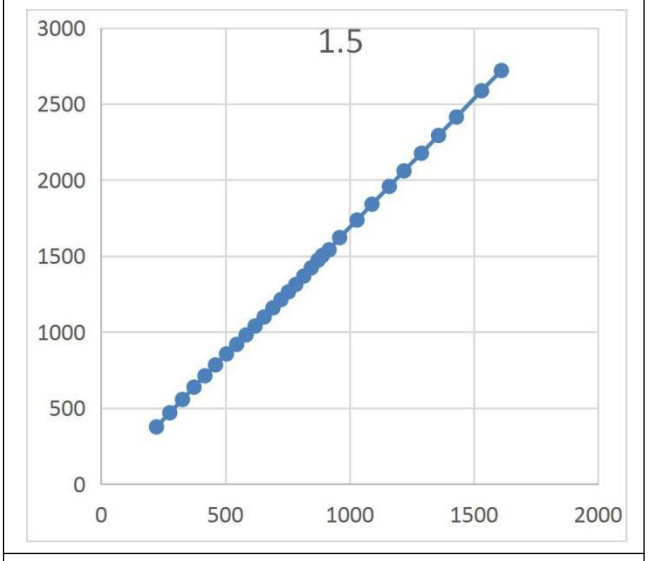
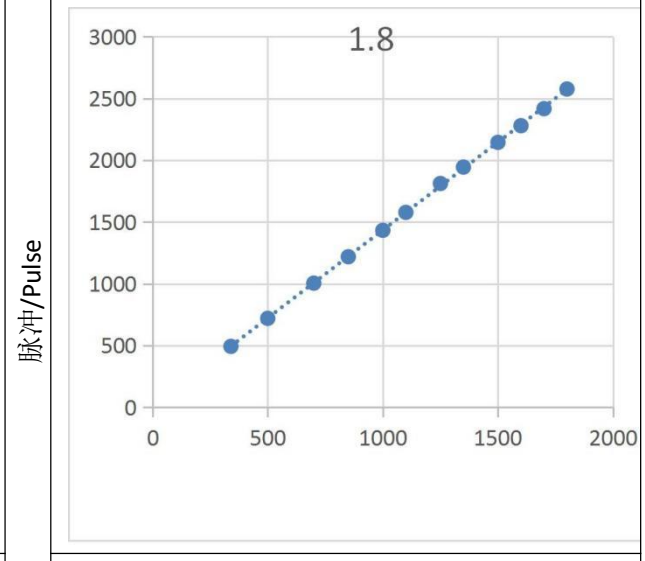
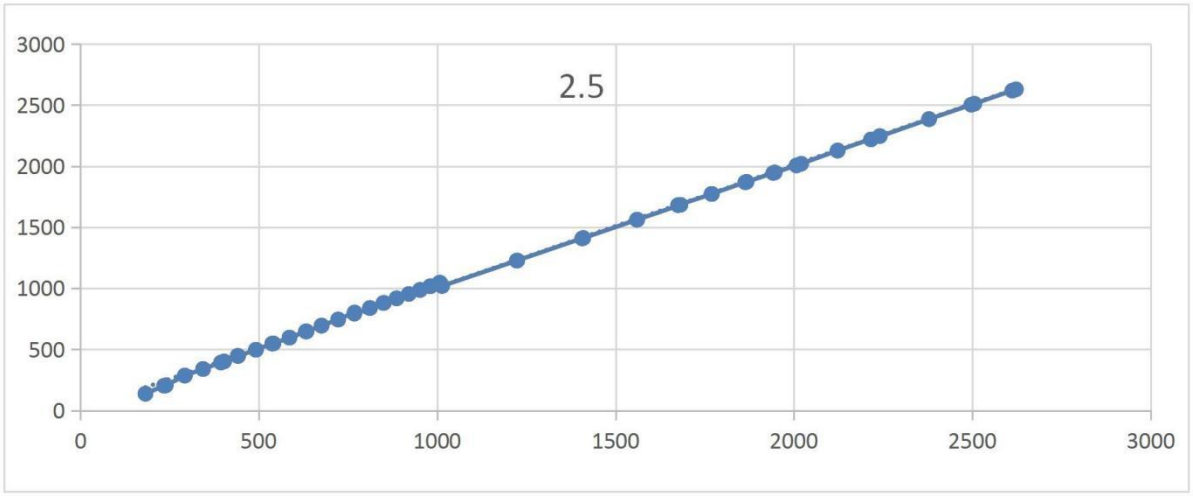
脉冲与流量线性表











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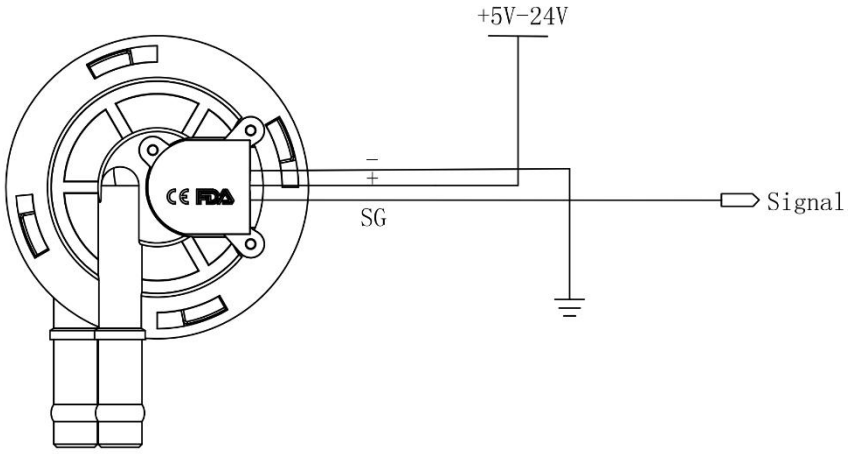
● 电气参数特性 / Electrical Specification（Ta=25℃）

参数//Parameter	符号/Symbol	典型值/Min	极限值/limit	单位/units
工作电压/Supply Voltage	Vs	5	24	V
输出电压/Output Voltage	VOUT		24	V
输出电流/Output Current	OUT		50	mA
饱和电压/Saturation Voltage	VDSON		0.4	V
待机电流/Standby Current	Is		5	mA
工作温度/Operating Temperature	Topr	0 ~ +65		℃
存储温度/Storage Temperature	Tstg	-10 ~ +70		℃
工作寿命/Working Life	Life	50000		H
耐压力/Pressure resistant		0.1		MPa

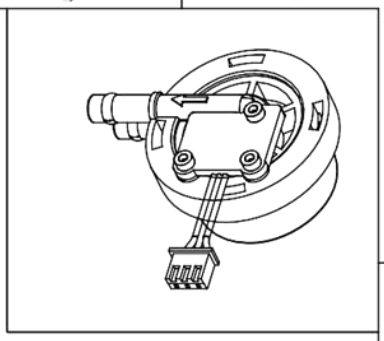
● 推荐应用电路 / Recommended Application Circuit

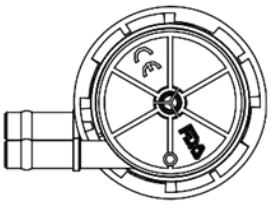


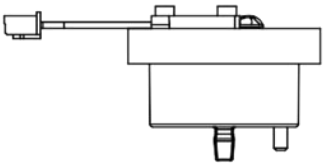
● 注意事项 / Precautions

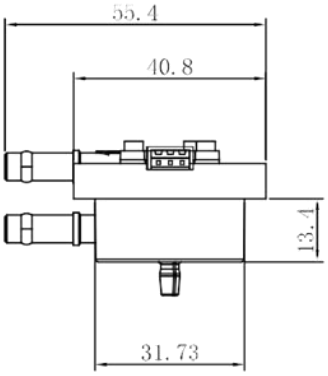
1. 正确接线，否子会烧坏流量计
   Correct wiring, will it burn out the flowmeter
2. 不可在脉冲式水流中使用
   Cannot be used in pulsed water flow
3. 输出脉冲信号，不可接负载
   Output pulse signal, do not connect to load

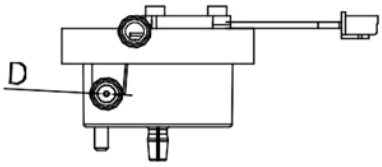
● 尺寸和推荐安装 / Outline Drawing and Recommended Installatio

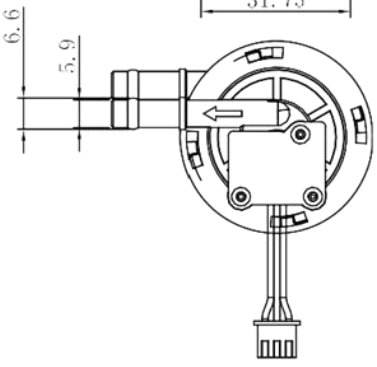




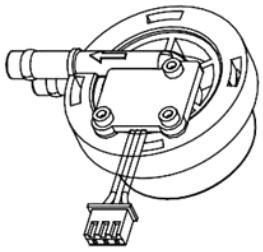








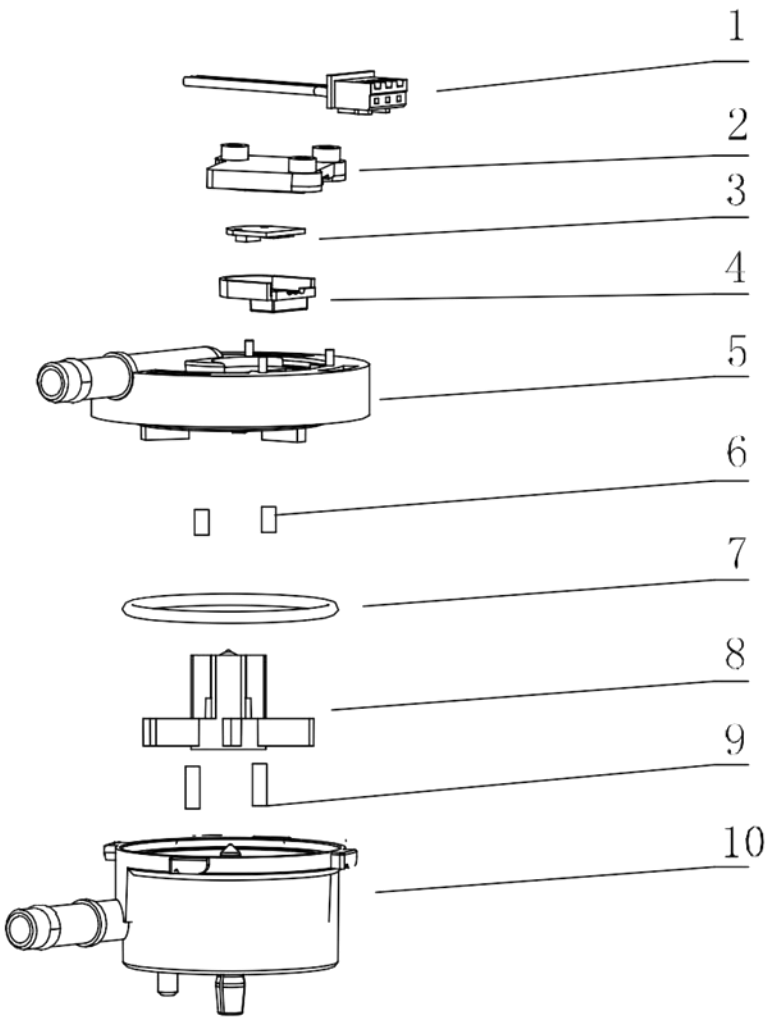
SG Yellow
VCC Red
GND Black



耐温 Temperature resistance	105℃	耐压 Withstand voltage	300V
镀锡 Tin plating	*	长度 Length	200±10
UL线度 UL wire gauge	1430	UL编号 UL number	E327087
颜色 Colour	黑红黄	线号 Line number	26AWG
线材规格 Wire specification			

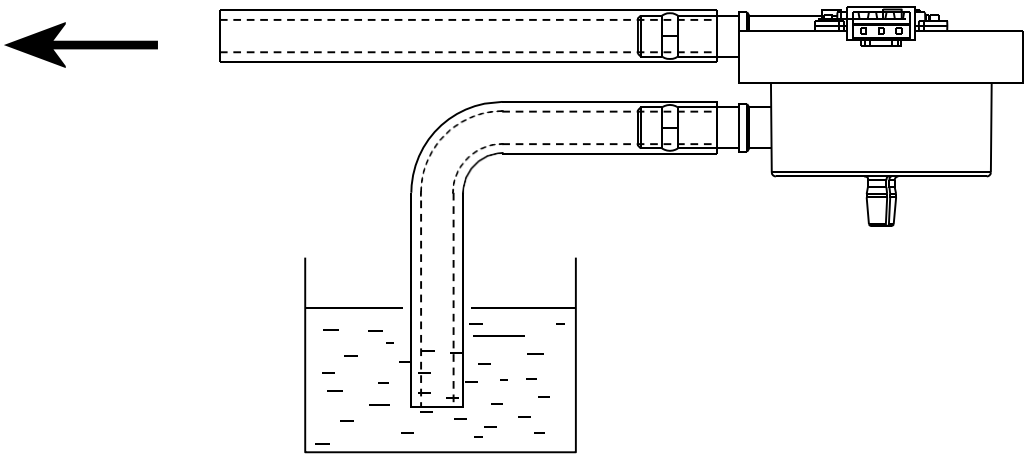
脚距 Foot distance	2.54	孔数 Number of holes	3
颜色 Colour	White	型号 Model	XH
端子规格 Terminal Specifications			

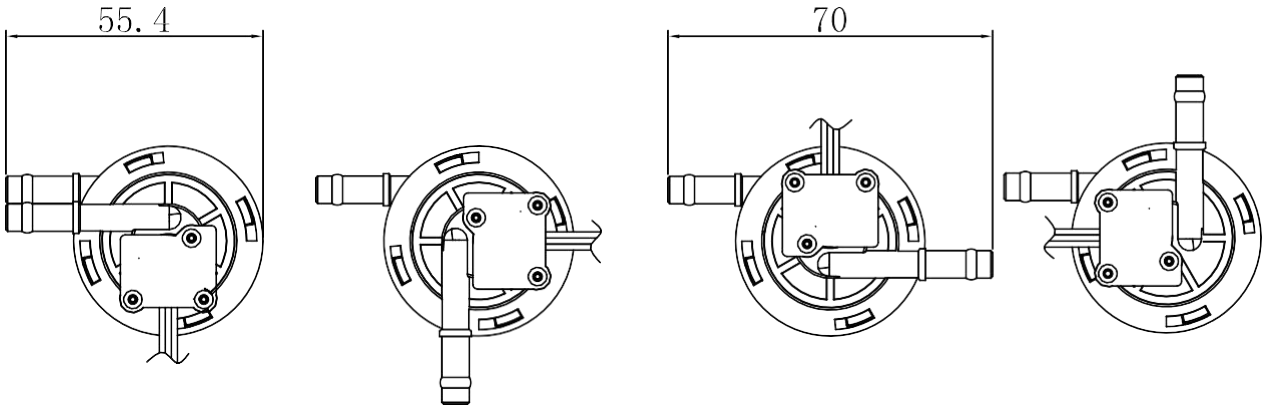
设计 Designer		材料 Material	*	单位 Unit	mm	深圳市睿联传感科技有限公司 SHENZHEN REALUNION TECHNOLOGY CO., LT D.		
检查 Checked		表面处理 Finish	*	比例 Scale	1:1			
审批 Approver		数量 Quantity	*	篇幅 Size	*	产品名 Product Name	HF10PP05	日期 Date	23-06-25
一般公差 Tolerances	0-10	±0.15	0.8	备注 Remarks	*	零件名 Part name	产品图	版本 REV	A
	10-35	±0.25							
	35-70	±0.35		视图 View		图号 DWG NO.	*	页数 Pages NO.	1/3



编号 NO.	名称 Name	数量 QTY	备注 P.S.
10	主下盖 Main under cover	1	PBT3030
9	磁铁塞	2	PBT3030
8	叶轮 Impeller	1	PP-G25
7	硅胶密封环 Silicone sealing ring	1	HE515C
6	铁氧体 Ferrite	2	
5	主上盖 Main upper cover	1	PBT3030
4	霍尔元件下盖 Hall Component under cover	1	ABS757
3	PCBA PCBA	1	
2	霍尔元件上盖 Hall Component cover	1	ABS757
1	线材 Wire	1	

设计 Designer		材料 Material	*	单位 Unit	mm	深圳市睿联传感科技有限公司 SHENZHEN REALUNION TECHNOLOGY CO., LT D.			
检查 Checked		表面处理 Finish	*	比例 Scale	1:1				
审批 Approver		数量 Quantity	*	篇幅 Size	*	产品名 Product Name	HF10PP05	日期 Date	23-06-25
一般公差 Tolerances	0-10	±0.15	0.8	备注 Remarks	*	零件名 Part name	爆炸图	版本 REV	A
	10-35	±0.25							
	35-70	±0.35		视图 View		图号 DWG NO.	*	页数 Pages NO.	3/3





0° 90° 180° 270°

设计 Designer		材料 Material	*	单位 Unit	mm	深圳市睿联传感科技有限公司 SHENZHEN REALUNION TECHNOLOGY CO., LT D.			
检查 Checked		表面处理 Finish	*	比例 Scale	1:1				
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	10-35	±0.25							
	35-70	±0.35		视图 View		图号 DWG NO.	*	页数 Pages NO.	2/3