浙 江 亿 宝 科 技 有 限 公 司

ZHEJIANG YIBAO TECHNOLOGY CO., LTD

承　　认　　書

Specification For Approval

客户名称：_____　　产品编号：MAG-B100060BS-01

产品名称：微动开关　　产品型号：MAG

制定:　吴爱旭　　审核:　李学林　　批准:　田学会　　日期：2020.08.26

客戶：_____　　协力厂商：浙江亿宝

签署（盖章）：　　签署（盖章）：

浙江亿宝科技有限公司 技术部

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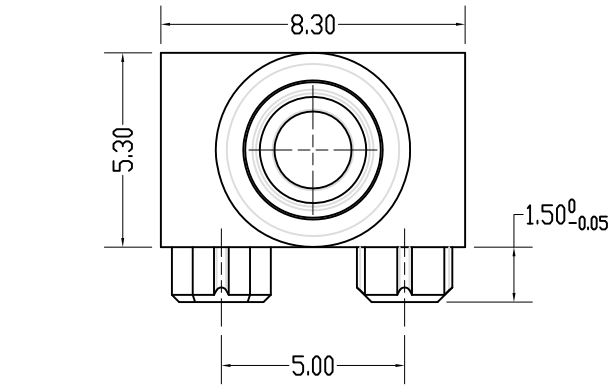
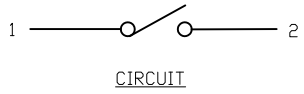
We appreciate for giving us thi s opportunity of samples approval. Please fax this table back to us immediately our fi ling after your counter -sign of confirm ation, we are looking forward to your reply.

地址：浙江省乐清市虹桥镇西工业区模具中心 F 幢
電話：0577-62318488
傳真：0577-62327071
Email：service@chinayibao.com
深圳办事处：
地址：深圳市光明区玉塘街道光明高新园西区七号侨德科技园A栋602
電話：0755-27193629　　傳真：0755-27193670
Email：service@chinayibao.com





CIRCUIT

1.机械参数 Mechanical Characteristics

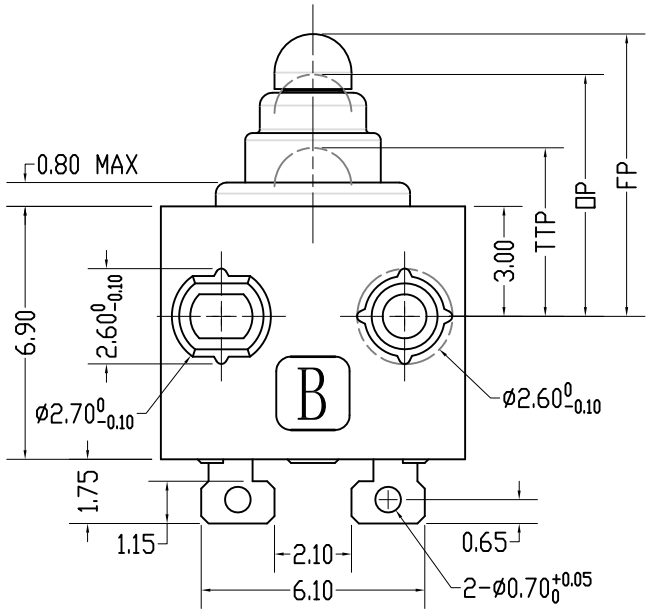
	项目 ITEM	规格 Standards
□F	操作力 □perating Force	0.6±0.3N
□P	动作位置 □pearting Position	7.1±0.3mm
FP	自由位置 Free Position	7.8mm Max.
TTP	总行程位置 Total Travel Position	5.1mm Max.

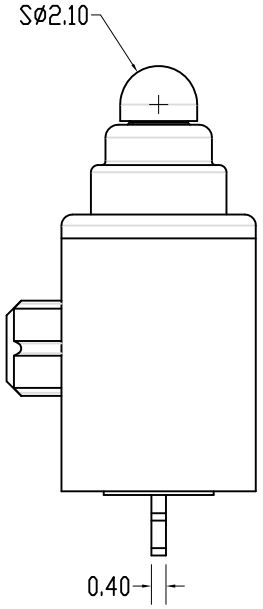
2.电气参数 Electrical Characteristics

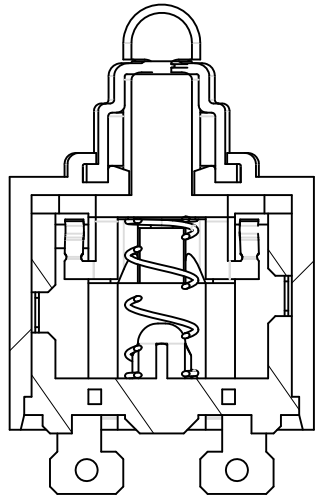
负载 Load	0.1A 12VDC
绝缘电阻 Insulation Resistance	100Mohms Min.
抗电强度 Dielectric Strength(50-60HZ)	500VAC Between terminals
	1000VAC Between terminals and ground

3.其它参数 □ther Characteristics

项目 ITEM	规格 Standards
机械寿命 Mechanical Life	300,000 次cycles
使用温度 □pearting Temperature	-40℃~85℃







WWYY表示周期移印或镭雕

标记	日 期	变更内容	变更单号	前版本

开关型号	MAG-B100060BS-01			未 注 公 差							
开关系列	MAG	版本:	A0	~5	>5~10	>10-25	>25~50	>50	角度		
底图总号	///	比例:	NONE	±0.10	±0.2	±0.25	±0.35	±0.7	±2°		
拟 制		日 期		单位: mm		图幅: A4		第1页, 共1页			
审 核		日 期		第三视角		IBAO 浙江亿宝 ZHEJIANG YIBAO					
批 准		日 期									

1、一般特性 General：

1.1 适用范围 Application Area:
该规格书指检测开关的一般使用范围 This specification refers to the general use of detector switch

1.2 使用温度范围 Operation Temperature rating： 参见产品图纸 See the outline drawing)
1.3 相对湿度 Operation Relative Humidity： ≤96%RH,+40℃
1.4 实验条件 Test conditions：若没有特殊说明，则试验大气条件如下：
环境温度 Ambient Temperature： 5~35℃
相对湿度 Relative Humidity： 45~85%
大气压力 Air Pressure： 86~106Kpa(860~1060mbar)
1.5 操作频率Operation frequency:
带电气负载：30次/分最大 30 operations/minute max(electrical)
机械操作： 30次/分最大 30 operations/minute max(mechanical)

2、外观、结构及尺寸 Appearance、Configuration and Dimensions：

2.1**外观：**产品外观良好，无锈蚀、裂纹和镀层缺陷
Appearance: Product appearance and no rust, crack and coating defects
2.2**结构尺寸：**参见产品图纸
Confuguration and Dimension: See the outline drawing
2.3**标识：**参见产品图纸 **Sign:** See the outline drawing
2.4**通过的安规认证：** 参见产品图纸
Safety Certification: See the outline drawing
2.5**产品防护等级：** 参见产品图纸
Degree of protection: See the outline drawing

3、额定负载及寿命 The rated load and life：

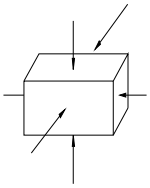
额定负载 The rated load	参见产品图纸 See the outline drawing
负荷寿命 Load Life	
机械寿命 Mechanical Life	

4、电气性能 Electrical properties：

No.	项目(Item)	标准(Standard)	检测方法(Test Method)
4.1	接触电阻 Contact Resistance	500mΩ Max	在1A 5VDC的条件下，采用电压降法测量 Measured by a voltage drop method at 1A 5VDC 检测开关前，请按动按键3次后检测接触电阻 before test contact resistance, please press the button 3 times
4.2	绝缘电阻 Insulation Resistance	100MΩ Min	在载流端子与外壳及非载流金属件之间,在相互绝缘的所有端子之间加500V直流电，持续时间1分钟 Apply 500 VDC for 1 min between terminals together and ground(at FP and TTP); Apply 500 VDC for 1 min between mutual insulation terminals(at FP and TTP);
4.3	抗电强度 The electric strength	无击穿现象发生 NO breaking insulation	在相互绝缘的所有端子之间加载500VAC(50-60Hz,漏电电流10mA),或端子与外壳及非载流金属件之间加载1000VAC(50-60Hz，漏电电流10mA)，持续时间60s 500VAC(50~60Hz,leakage current 10mA) is applied between non-connected terminals, or 1000V(50~60Hz,leakage current 10mA) between terminals and out casing,or between terminals and non-loaded metal parts,last for 60s。

5、机械性能 Mechanical properties：

	项目(Item)	标准(Standard)	实验方法(Test Method)
5.1	操作力 Operation Force	参见产品图纸 See the outline drawing	在操作元件末端沿操作方向均匀施加载荷，使操作元件转换到动作位置过程中的最大力 The Max. force on the actuator from free position to operating position
5.2	回复力 Release Force	参见产品图纸 See the outline drawing	在操作元件末端沿操作方向均匀减少载荷，使操作元件从动作位置转换到释放位置过程中,开关按钮提供的最小力 The smallest force on the actuator when the actuator moved back from total travel position to release position
5.3	动作位置 Operatting Position	参见产品图纸 See the outline drawing	开关发生转换时，操作元件末端到开关安装孔中心的距离 When the Swtich transformation, the operation element end to switch's mounting hole center distance
5.4	行程 Pre Travel	参见产品图纸 See the outline drawing	从自由位置到动作位置的距离 The distance from the free position to action position
5.5	差程 Movement differential Travel	参见产品图纸 See the outline drawing	从动作位置到释放位置的距离 The distance from the action position to release position
5.6	接线端强度 Terminal Strength	一端子无松动、损坏及绝缘层的破裂 - The collapse of The contacts, and no loose, damage The insulation layer - 电气性能应符合第4部分的要求 - Electrical properties shall comply with the requirements of part 4	按IEC61058标准，以3N作用力沿轴向逐渐施加于接线端末端，作用力方向为离开开关向外指向，保持10±1秒，每个接线端子测量一次 According IEC61058,a static load of 3N shall be applied to the tip of terminal in a desired direction for 10±1s.The test shall be done once per terminal
5.7	振动 Vibration Proof	实验后：After test: -绝缘电阻：50MΩ Min Insulation Resistance: 50MΩ Min -抗电强度应符合4.2的要求 The electric strength should accord with the requirement of 4.2 -应无明显外观损坏 Should be no significant damage appearance -操作力误差应在±10%之内 Operating force error should be within ±10% -开关外观及结构应无损伤 Switch appearance and structure should have no damage	按IEC60068-2-6：2008标准，并在下述参数条件下进行试验： According IEC60068-2-6:2008，test under the condition of the following parameters: 1) 振频：10~55HZ Vibration frequency range: 10 ~ 55 HZ 2) 振幅：1.5mm amplitude: 1.5 mm 3) 振动变化速率：10~55~10HZ 60秒 The change rate of vibration: 10~55~10HZ 60S 4) 变频方法：对数或线性形式 The frequency conversion methods: logarithmic or linear form 5) 振动方向：三个相互垂直的方向，其中一个方向应是促动元件运动的方向 vibration direction: three perpendicular directions, one direction should be the direction of motion of the actuating element 6) 时间：每个方向90分钟(共计270分钟) Time: 90 minute in each direction (a total of 270 minute)

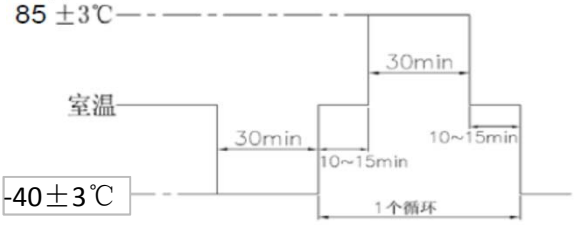
5.8	**冲击** **Mechanical Shock**	实验后： After test: -绝缘电阻：50MΩ Min Insulation Resistance: 50MΩ Min -抗电强度应符合4.2的要求 The electric strength should accord with the requirement of 4.2 -应无明显外观损坏 Should be no significant damage appearance -操作力误差应在±10%之内 Operating force error should be within ±10% -开关外观及结构应无损伤 Switch appearance and structure should have no damage	据IEC60068-2-27:2008，试件在下述条件下进行试验： Specimens tested under the condition of the following parameters: 1) 安装方向：常规方法 installation direction: conventional methods 2) 加速度：30 m/S^2(30G) Acceleration: 30 m/S^2 (30 G) 3) 时间：11ms Duration Time:11ms 4) 实验方向：图示6个方向 Test direction: here is 6 direction  5) 冲击次数：每个方向3次(共计18次) Number of shocks: three times in each direction (a total of 18)
5.9	**可焊性** **Weldability**	超过90%的浸锡面积被焊料所覆盖 More than 90% of the immersion tin area covered by the solder	据IEC60068-2-20:2008，试样在下述条件下进行试验： According to IEC60068-2-20,Specimens tested under the following conditions: (1)、焊料：依IEC60068-2-20之规定 Solder:According IEC60068-2-20 (2)、助焊剂：依IEC60068-2-20（松香助焊剂，质量百分比为25%松香，75%异丙醇或酒精溶液）。 Flux: According to IEC60068-2-20(Rosin Flux,having a nominal composition of 25% and 75% isoproanol). (3)、焊接温度：235±5℃ Soldering Temperature: 235±5℃ 焊接时间：3±0.5s Immersing Time:3±0.5s 焊剂浸渍时间：室温下浸渍5-10s Flux immersing time：Shall be 5-10s in normal room termperature. (4)、浸渍深度：接线端应浸到离开关根部1.6mm处 Terminal should be impregnated to leave off the roots of 1.6 mm
5.10	**耐焊接热** **Welding heat resistant**	实验后： After test: -无外观及功能损坏 No appearance and function damage -电气性能应符合第4部分的要求 Electrical properties shall comply with the requirements of part 4	据IEC60068-2-20，在以下条件试验： According to IEC60068-2-20,Specimens tested under the following conditions: 焊接温度与时间 Soldering Temperature and time: 自动焊接：260±5℃s,5±1s Automatic welding：260±5℃s,5±1s 手工焊接：350±10℃s,3±1s Manual Soldering: 350±10℃s,3±1s 浸渍深度：接线端应浸到离开关根部1.6mm处 Terminal should be impregnated to leave off the roots of 1.6 mm

6、寿命实验 Life Test：

	项目(Item)	标准(Standard)	实验方法(Test Method)
6.1	机械寿命 Mechanical life	实验后： After test: -绝缘电阻：10MΩ Min Insulation Resistance:10MΩ Min -接触电阻：1Ω Max -Contact Resistance： 1Ω Max -抗电强度应符合第4.3条的要求 The electric strength should accord with the requirement of 4.3 —开关外观及结构应无损坏 Switch appearance and structure should have no damage	1、在不带负载的条件下，以20~30次/分钟的操作频率在寿命试验设备上连续转换300,000次 Under the condition of without load, at the operating frequency of 20 ~ 30 cycles/min continuous transformation on life test equipment 300000 cycles 2、操作行程为按键下压到OT的2/3位置(防止过压现象) Operating stroke for buttons down the 2/3 OT (prevent overpressure phenomenon)
6.2	负载寿命 Load life		开关接额定负载(额定负载参见产品图纸)，操作规定次数 To load the rated load(see drawing) on the switch, operating the corresponding number of load life.

7、耐候性能 Environmental test：

	项目(Item)	标准(Standard)	实验方法(Test Method)
7.1	低温 Cold Proof	实验后： After test: -绝缘电阻：50MΩ Min Insulation Resistance:50MΩ Min -抗电强度应符合第4.3条的要求 The electric strength should accord with the requirement of 4.3 -操作力误差应在±20%之内 Operating force error should be within ±20% -开关外观及结构应无损坏 Switch appearance and structure should have no damage	据IEC60068-2-1:2007，试件在-40±3℃的温控箱内保持96小时，然后在正常温度和湿度下恢复1小时，并在此后1小时内对试品进行测量，水滴应消失 According to IEC60068-2-1:2007,Specimen in - 40 ±3 ℃ temperature control box to keep 96 hours, then recover under normal temperature and humidity for 1 hour, and after 1 hour to try to measure, water droplets should disappear
7.2	高温 Hot Proof		据IEC60068-2-2:2007，试件在85±3℃的温控箱内保持96小时，然后在正常温度和湿度下恢复1小时，并在此后1小时内对试品进行测量，水滴应消失 According to IEC60068-2-2:2007,Specimen in 85± 3 ℃ temperature control box to keep 96 hours, and then the recovery in the normal temperature and humidity for 1 hour, and after 1 hour to try to measure, water droplets should disappear
7.3	恒定湿热 Resistance to Humidity		据IEC60068-2-3：2007，试件在40±3℃，90~95%RH的温控箱内保持96小时，然后在正常温度和湿度下恢复1小时，并在此后1小时内对试品进行测量，水滴应消失 试件按下述实验条件试验5次，然后在正常温度和湿度下恢复1小时，并在此后1小时内对试品进行测量，水滴应消失 According to IEC60068-2-3:2007, Specimen in 40 ±3 ℃ and 90 ~ 95% RH temperature control box to keep 96 hours, and then the recovery in the normal temperature and humidity for 1 hour, and after 1 hour to try to measure, water droplets should disappear

7.4	温度转换 Temperature conversion		据IEC60068-2-12:2009，试件按下述实验条件试验5次，然后在正常温度和湿度下恢复1小时，并在此后1小时内对试品进行测量，水滴应消失 According to IEC60068-2-12:2009, at the following experimental condition test specimens for 5 times, then the recovery in the normal temperature and humidity for 1 hour, and after 1 hour to try to measure, water droplets should disappear 

1、 开关的安装 The installation of the switch：

1.1开关的安装和固定:依产品图

The installation of switch and fix： according to the outling drawing

1.2安装开关时的绝缘配线(Installing a switch the insulation of the wiring)

安装侧的框架为金属时，请注意端子配线与各框架金属面的空间距离

When installed side of the frame for the metal, please pay attention to the terminal wiring and the framework of metal surfaces space distance

1.3开关端子配线(The switch terminal wiring)

给端子配线时，请选用适当插座、电线，确认没有晃动和松动(请参照规格书图纸上的端子规格)

To terminal wiring, please choose the appropriate socket, wire, confirmed that no shaking and loose (please refer to the terminal on the specification drawing specifications)

2、 开关的储存(the storage of switch)：

● 请避开污染气体、有机气体产生的地方(如燃气取暖器附近等)、灰尘、潮湿环境等

Please avoid pollution of the gas, organic gases areas (e.g., near the gas heater, etc.), dust, humidity, etc

● 一般保存温度湿度：温度5~35℃ 湿度≤80%RH

Temperature humidity commonly: 5 ~ 35 ℃ temperature humidity 80% RH or less

● 开关储存期为6个月，超过6个月需重新检查

Switch storage life for six months, more than six months to check again

3、 开关的使用(The use of the switch)：

小心不要让开关跌落地面和受猛烈冲击，这样可能使开关的内部元件损坏，因为开关的设计是适用于微小操作力的

Be careful not to let the switch fell to the ground and the violent impact, this might make the internal components of the switch is damaged, because the design of the switch is applicable to small operating force

开关操作上的注意点 The attention of the switch operation on site：

(1) 操作体要完全离开开关按键，并且要留出动作时所需的移动量

The operating body to completely leave the switch button, and move to set aside the action required

(2) 设定的过行程值，是在开关动作之后的移动量，以动作后达到OT值(Min表示)的60%~85%为宜

set of values, is mobile, after the switch action to action after OT value (Min) of 60% ~ 85% advisable

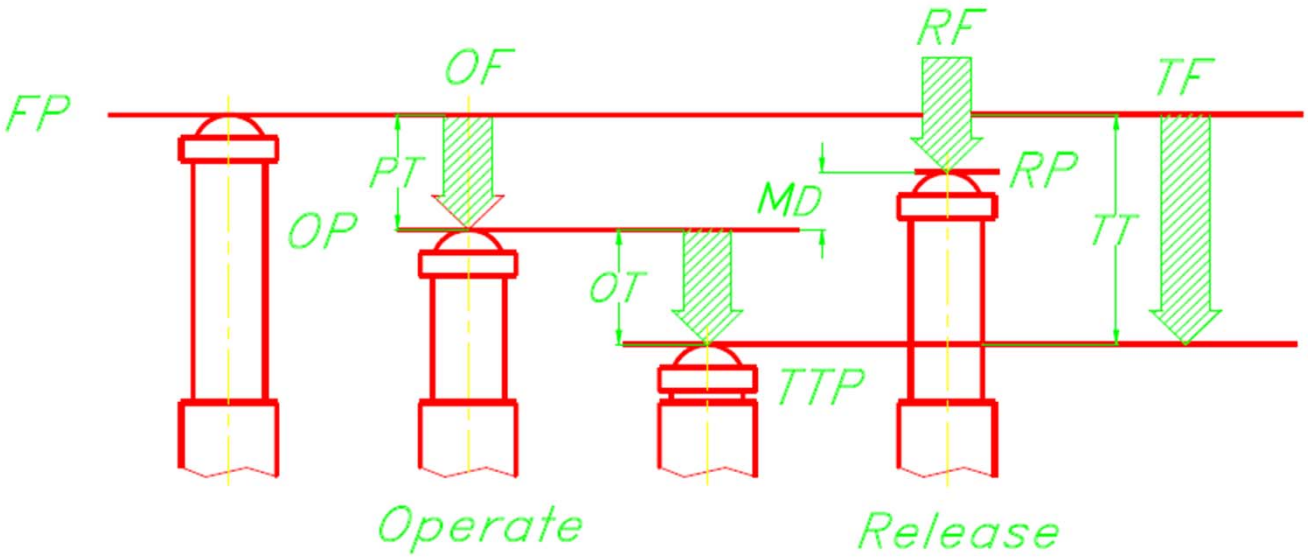
(3) 操作伴有惯性冲击时，请事先另外协商

operation with inertial impact, additional consultation in advance

(4) 操作体的设置，应考虑开关的操作力

the operating body set, should consider the operation of the switch

附注：操作参数示意图(Note: operating parameters schematic diagram)



OF:操作力(Operating Force)
RF:回复力(Release Force)
TF:全行程力(Total Travel Force)
FP:自由位置(Free Position)
OP:动作位置(Operationg Position)
TTP:全行程位置(Total Travel Position)
RP:释放位置(Release Position)
PT:行程(Pre Travel)
OT:过行程(Over Travel)
MD:差动行程(Movement Differential Travel)
TT:全行程(Total Travel)