ISO9001: 2015 ISO14001: 2015

# 产品规格书

PRODUCT SPECIFICATION

产品名称: 轻触开关 ITEM: TACT SWITCH

产品型号: TYPE: KAN0616-0751B-CL15

制 订: DRAWN: <u>刘叶泉</u>

审 批: APPD: <u>彭飞</u>

发布日期: DATE: **2019.3.27** 

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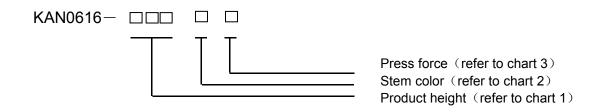
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CUSTOMER	CUSTOMER'S P/N	GYE'S P/N	PRODUCT	REVISION
		KAN0616-0751B-CL15	TACT SWITCH	Α

#### A.Specification & meanings

The name of the tact switch is composed by type and specification, the particular meaning of the type, specification and code is as follows.



1. Product height: It is denoted by three figures; For examples, "075" expresses the product which the total height is 7.5mm, as chart 1 shows:

Code	Product height	Code	Product height	Code	Product height
043	4.3	085	8.5	153	15.3
050	5	090	9		
060	6	095	9.5		
070	7	100	10		
073	7.3 (Joint stem)	110	11		
075	7.5	130	13		
080	8	150	15		

2. Stem color: It is expressed by a figure, as chart 2 shows:

Color	Black	Red	White	Blue	Yellow	Blue	Gray
Code	1	2	3	4	5	6	7

3. Operating force: An English letter expresses it, unite: Newton (N),as chart 3 shows:

	Operating		
force		Press force	Return force
Code	Spec		
Α	1.0	1.0±0.3	0.2min
В	1.6	1.6±0.5	0.4min
С	2.6	2.6±0.5	0.6min

Examples: "KAN0616-0501B-CL15" denotes the tact switch with 6×6 base, the height is 5.0mm,the stem is black, the operating force is 1.6N,The cover and the base material is PPA, It is waterproof products.

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- 1、 概述(GENERAL)
- 1.1 适用范围(APPLICATION)

此规格书适用于机械式轻触开关的相关要求

This specification is applied to the requirements for TACTILE SWITCH (MECHANICAL CONTACT)

- 1.2 工作温度范围(Operating Temperature Range)
- -20℃~70℃(在标准大气压、标准湿度条件下)
- -20°C ~70°C (Normal humidity, normal air pressure)
- 1.3 贮藏温度范围(Storage Temperature Range)
- -30℃~80℃(在标准大气压、标准湿度条件下)
- -30°C∼80°C (Normal humidity, normal air pressure)
- 1.4 测试条件(Test Conditions)

在没有其它特定的条件下,应该在以下的条件下进行测试和测量:

Unless otherwise specified, tests and measurement shall be made in the following standard conditions:

Normal temperature  $\cdots 5^{\circ}$   $\sim 35^{\circ}$   $\sim$ 

标准湿度 ......相对湿度 25%~85%

Normal humidity .....relative humidity 25%~85%

标准大气压------86KPa~106Kpa

Normal air pressure·····86Kpa~106Kpa

在制造过程中,测试和测量应该在以下的条件下进行:

If any doubt arise from the judgment, tests shall be conducted at the following conditions:

温度-----20℃±2℃

 $Temperature \cdots \cdots 20 ^{\circ}\text{C} \pm 2 ^{\circ}\text{C}$ 

相对湿度………65%±5%

Relative humidity ......65% ±5%

环境气压------86KPa~106Kpa

- 1.5 存储方法(Storage method)
  - 1. 使用前确保包装完整无破损, 无浸湿.

Ensure that the product without package breaking or wetting before use.

2. 存储条件 Storage conditions:

储存温度 Storage temperature: -5~35 C; 储存湿度 Storage humidity: 25%~80%;

未开封状态: 6个月内使用完毕(从发货日开始计算); 超过6个月后再使用的,使用前请先验证:端脚无氧化、无发黑、塑料件无吸湿起泡,确保焊接的适宜性;

Unopened status: Use up the product as soon as possible before 6 months. (calculated from shipment date). Over 6 months, please make sure below before use it: terminal without oxidation or blackening, plastic parts without moisture absorption or bubble, ensure solderability.

己开封状态:建议半个月内使用完毕;

Opened status: use up within half of month;

储存注意事项: 避开高湿高温和有腐蚀性气体的环境及阳光直射;

Storage precautions: Please avoid the following environment: with high humidity, high temperature, corrosive gases and direct sunlight.

3. 请勿超重叠放.

Do not stack too many switches.

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2、 详细说明

**Detailed specification** 

2.1 外观:应无影响、降低产品性能的缺陷;

Appearance: There should be no defects that affect the serviceability of product.

2.2 结构尺寸和安装尺寸:应符合装配图要求;

Style and dimension: shall conform to the assemble drawings.

2.3 操作形式:有触觉反应的操作

Type of actuating: Tactile feedback.

2.4 开关结构: 单回路单输出(具体的触点结构在装配图中已绘出);

Contact arrangement: 1 pole, 1 throw

(Details of contact arrangement are given in the assembly drawings.)

2.5 开关工作额定值: DC 12V, 50mA (有效值)

Ratings: 12V DC, 50mA (effective value)

3. 电气性能:

**ELECTRICAL SPECIFICATION** 

I	 页 目		试验条件		要求
	TEM	Т	EST CONDITIONS	F	REQUIREMENTS
1	接触电阻 Contact Resistance	交流电源的电路中施加于手柄中心 Applying a s force to the cent shall be made b	mA 的直流电源或不 n,以一个等于 2 倍热 tatic load of 2 time er of the stem, me ny 5V DC 10mA or urrent contact resist	安力的静负荷 es operating easurements r more than	≤100mΩ
2	绝缘电阻 Insulation Resistance	量端子之间底座、 Measuremen application of	蓝加 DC 100V /1min l 盖板的电阻值 t shall be mad 100V DC potent cross terminals an	e following tial, across	$\geqslant$ $100$ M $\Omega$
介质耐压 在端子之间施加 250V AC (50HZ 或 250V AV (50HZ or 60HZ) shall voltage proof across terminals, for one minute.				无击穿、无飞弧 There should be no breakdown and flashover	
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			KAN0616-0751B-CL15 TACT SWIT				TACT SWIT	СН	Α
	项目				试验	条 件			要求
	ITEM			TE	ST CON	DITIONS		RE	EQUIREMENTS
4	触点弹Bound		在导通和断开 Lightly strikin encountered i	过程中 in norm hall be 开关Swite	测试开关 center mal use tested at ch 10KΩ	柄中心(每秒 3 弾力 of the stem (3 to 4 times per t "ON" and "OFF 示波器 Oscillogra 断开" OFF"	at a rate er second),		I-3msec.max F-8msec.max
	.械性能 <mark>:</mark> IANICAL S	PECII	FICATION						
1	按力 Operati Force	ታ ing	开关垂直于操作力,测量开关-Placing the soperation is voluded applied to the solution of the solution is the solution of th	导通所 switch /ertical to the	需的最大 such th and the center o	开关驱动件顶端 力度。 at the direction in gradually inco of the stem, the to come to a st	of switch reasing the maximum		refer to chart 3
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	GA	SPECIF	ICA	TIONS			
С	USTOMER	CUSTOMER'S P/N	GYE'S P/N	PRODUC	Т	REVISION	
	KAN0616-0751B-CL15 TACT SW					А	
	项目		试验条件			要求	
	ITEM	Ti	EST CONDITIONS		RE	EQUIREMENTS	
2	最大行程 Full Travel	施加在开关驱动件项 Placing the switch operation is vertica 2times operating for	T关垂直于操作方向放置,以一个等于 2 倍按力的静负荷施加在开关驱动件顶端中心,测量顶端移动的距离。Placing the switch such that the direction of switch peration is vertical and then applying static load of times operating force to the center of the stem; the avel distance for the switch to come to a stop shall be neasured.				
3	回弹力 Return Force	全行程后,测量顶端 The sample switch switch operation is stem in its center to	开关垂直于操作方向放置,在开关驱动件顶端中心下降至全行程后,测量顶端向自由位置转换的力度。 The sample switch is installed such that the direction of switch operation is vertical and upon depressing the stem in its center to the whole travel distance, the force of the stem to return to its free position shall be measured.				
4	停止强度 Stop Strength	的静负荷持续 1min。 Placing the switch operation is vertical	]放置,从操作方向向驱范 such that the direction , and then a static load rection of stem operation	on of switch of 30N shall	Ther	机械和电气损坏 re shall be no sign of damage echanically and electrically.	
5	开关垂直于操作方向放置,反方向实施最大操作力,并测 手柄拔出 量手柄的行程范围。					20N.min.	
6 耐焊接热 Soldering heat resistance resistance				机械和电气损坏			
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GANGYUAN APPROVAL SPECIFICATIONS						
С	USTOMER	CUSTOMER'S P/N	GYE'S P/N	PRODUCT	-	REVISION
			KAN0616-0751B-CL15	TACT SWITC	СН	А
	项目 ITEM		试验条件 TEST CONDITIONS		R	要求 EQUIREMENTS
6	(1) 温度和浸焊时间:					ere shall be no sign damage chanically and ctrically.
7	可焊性 Solderability	forth below: (1) 焊接温度:245 Solder temp (2) 浸入时间:2s- Immersion ti 对于其它步骤	shall be made following $5\pm5^{\circ}\!$	试验 12a	盖 9 Exc the	边缘外涂层应均匀覆 90%以上 ept for the edge, coating should er a minimum 90%
1	k限电气性能: RONMENTAL SPE	CIFICATION				
低温测试 left in normal temperature and numidity conditions for Contact ≤200mg						
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1 h before measurements are made: (1) 温度: 80±2℃ temperature:80±2℃ (2) 时间: 96h time: 96h   样品应放在常温及标准湿度的环境中 1 小时后,根据下面的测试要求进行 5 次循环的温度周期性测试: 测试期间样品应保持干燥 After 5 cycles of following conditions, the sample shall be allowed to stand under normal temperature and humidity conditions for 1 h. and measurements shall be made. During the test waterdrops shall be removed.    Temperature   Time			NGTUAN		/ / // /	1 <b>(</b> )		<u> </u>	יווע	<u> </u>	
项目 ITEM TEST CONDITIONS REQUIREMENTS  高温测试 Heat resistance  样品应放在常温及标准湿度的环境中 1 小时后,根据下 面的测试要求进行测试: Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 h before measurements are made: (1) 温度: 80±2℃ temperature.80±2℃ (2) 时间,96h time: 96h   # 品应放在常温及标准湿度的环境中 1 小时后,根据下面的测试要求进行 5 次循环的温度周期性测试: 测试期间样品应保持干燥 After 5 cycles of following conditions, the sample shall be allowed to stand under normal temperature and humidity conditions for 1 h. and measurements shall be made. During the test waterdrops shall be removed.    Temperature   Time	С	USTOMER	CUSTOMER	S P/N	G	YE'S P/N		PRO	DUCT	Г	REVISION
TEST CONDITIONS   REQUIREMENTS				KAN0616-0751B-CL15 TACT SWITC				CH A			
TEST CONDITIONS   REQUIREMENTS					试 验	条件					 要求
高温测试 Heat resistance  2  # Bale and Application (Application of the product of temperature)  # Bale and Application of the product of temperature and humidity conditions for 1 h before measurements are made: (1) 温度、80±2℃ temperature:80±2℃ (2) 时间:96h time:96h  # Bale and Application of the product of temperature and humidity conditions for 1 h before measurements are made: (1) 温度、80±2℃ (2) 时间:96h time:96h  # Bale and Application of the product of temperature and humidity conditions for 1 h. and measurements shall be allowed to stand under normal temperature and humidity conditions for 1 h. and measurements shall be made. During the test waterdrops shall be removed.    Temperature   Time   Ti							IS			R	
面的测试要求进行 5 次循环的温度周期性测试:测试期间样品应保持干燥 After 5 cycles of following conditions, the sample shall be allowed to stand under normal temperature and humidity conditions for 1 h. and measurements shall be made. During the test waterdrops shall be removed.	2	Heat	面的测试 Following left in nor 1 h before (1)温 ten (2)时	面的测试要求进行测试: ollowing the test set forth below the sample shall be eft in normal temperature and humidity conditions for h before measurements are made: (1) 温度: 80±2℃ temperature:80±2℃ (2) 时间: 96h							tact resistance: $0m\Omega$ 3,4.1,4.2,4.3
APPROVE BY       彭 飞 2019.3.27       CHECKED BY       刘叶泉 2019.3.27       PRPARE BY       卢娇娇 2019.3.27	3	Change of	面的测试 测试期间 After 5 cy be allowe humidity be made removed.	要求进 样品应 rcles of ed to s condition e. Dur	行 5 次循环保持干燥 f following stand undo ons for 1 ring the Temper -10±2 -10~6	condition er norma h. and m test wat cature 2℃ 65℃	期性测s, the sal tempe easurer erdrops Tim 2(ho	试: ample erature ments shall ee ur)	shall and shall	Con ≤200 项目	tact resistance: $0m\Omega$ 3,4.1,4.2,4.3
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	CUSTOMER	CUSTOMER'S P/N	GYE'S P/N	PRODUCT	7	REVISION	
			KAN0616-0751B-CL15	TACT SWITC	СН	А	
	项目 ITEM	-	试验条件 TEST CONDITIONS		要求 REQUIREMENTS		
4	湿温测试 Moisture resistance	面的测试要求进行 Following the tes left in normal ten 1 h before measu (1) 温度: 60± temperatus (2) 相对湿度: relative hu	temperature: 60±2℃ (2) 相对湿度: 90%~95% relative humidity:90% to 95% (3) 时间: 96h				
5	硫化试验 Sulfuration resistance	Conta ≤200 项目					
6	盐雾试验 Salt Mist	(1)温度:35℃ temperature (2)盐溶液浓度 salt solution (3)时间:48h± Time:48h± 实验后的盐沉积	I be checked after followin ±2℃ e: 35℃±2℃ : 5±1%(质量百分比) i: 5±1%(solids by mass) :1h		rema shall	件上没有腐蚀斑点 No rkable corrosion be recognized in I part.	
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C	USTOMER		CUSTOMER'S P	/N C	SYE'S P/N	PRODUCT	Γ	REVISION
				KAN061	6-0751B-CL15	TACT SWIT	СН	А
	及限机械性制 ENDURAN		PECIFICATION					
	项目				: 条 件			要求
	ITEM			TEST CC	NDITIONS		RE	EQUIREMENTS
1	工作寿 Opeation		forth below: (1)DC 12V DC 12 (1)按动速 Rate o (1)按力: (2)Operat (3)无负载	t shall be n /, 50mA 带分 V, 50 mA res 率: 1-2 次/积 f operation: 1 按力的 1~1. ting Force:	nade following t t istive load l-2 times/s 5 倍 Operating Forc	e1~1.5 倍	resis 触 Cor boun 好 Oper initia 项	电阻≤1ΩContact tance≤1Ω 弹力≤10ms ntact nce≤10ms v: 初值的±30% rating Force: I value±30% 3,4.1,4.2,4.3
2	根据以下给定条件进行测试: Measurement shall be made following the test set forth below:  (1) 振动频率范围: 10~55~10Hz Vibration frequency range: 10 to 55 to 10Hz  (2) 振幅(峰一峰): 1.5mm Amplitude: 1.5mm  (3) 振动方向: 包括手柄行程方向在内的三个相互到直的方向 Direction of vibration:Three mutuall perpendicular direction including the direction of steel travel  (4) 测试时间:每次 2hours. Duration: Each 2hours.							3,4.1,4.2,4.3 3,4.1,4.2,4.3
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С	USTOMER		CUSTOMER'S	P/N	GY	E'S P/N	PRODUCT	REVISION	
				K	AN0616-0	0751B-CL15	TACT SWITCH	А	
	建接条件: DERING CO	ONDIT	IONS:						
	项目 ITEM				R	推荐条 ecommended (			
7.1	手工焊: Hand sold								
			助焊剂	目 ems 可附着量 buit-up		下附着于零部件!	条件 Condition 贴装面的程度 e shoud not be co	nated with flay	
	自动浸焊 Condiftons for Auto-dip		Condiftons for Auto-dip		fure A	印刷电路板焊接面的周围温度 100℃ max. Ambient temperature of the soldered surface of PC board. 100℃ max.			
7.2						60s max.			
				焊接温度 Soldering temperatu		ure	260℃ max.		
			焊接浸 Continuous		time		5s max.		
			焊接 Number o	爱次数 of solderin	ng		2 次以下 2times max.		
7.3	3 波峰焊接 Wave Soldering		Room	X 260° 255° 230° 150°		120~150sec TIME(sec)	5~10sec 60sec		
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8. 防水性	waterproof test				
防水等级 Waterpro of grade	后,根据要求进行测试: The tested samples should	取出	IP67	After the experiment, there is no water, no corrosion, no rust and the resistance≤100mΩ 绝缘电阻:≥100MΩ Insulation Resistance≥100MΩ 耐压测试:在端子之间施加 250V AC (50HZ 或 60HZ) /1min Pressure test:250V AV (50HZ or 60HZ) shall be applied across terminals for one minute.	
	常温及标准湿度的环境中风干(Test according to the cocustomer,The tested sample	les should be dried in the rature and standard humidity for	IP68		

#### 9. 焊接说明: SOLDERING EXPLAIN:

#### 焊接说明:

1、开关浸焊后,注意不要用溶剂清洗。

After switches were soldered, please be careful not to clean switches with solvent.

1.1 在使用烙铁的情况下,焊锡温度应在350℃以下、3秒以内。

In the case of using solding iron, solding conditions shall be 350°C max and 3 sec.max.

1.2 浸焊后,注意不要在顶部施加负荷。

Right after switches were soidered; please be careful not to load to on the knobs of switches.

- 2、设计中应注意的事项( Design instructions)
- 2.1 印刷基板的安装孔尺寸参见产品图。

Follow recommended P.W.B. piercing plan in outside drawing page.

- 3、注意点(Note):
- 3.1 注意不要施加超负荷的压力或晃动开关。

Please be cautions not to give excessive static load or shock to swiches.

3.2 开关浸焊后,印刷基板注意不要叠放。

Please be careful not to pile up P.W.B.after switches were soldered.

3.3 保管时尤其应注意避开高湿高温和有腐蚀性气体的环境。如需要长时间保存,请不要打开包装箱。

Preservation under high temperature and high high humidity or corrosive gas should be avoided Especially . When you need to preserve for a long period ,do not open the carton.

3.4 使用标准插入机器 PANASERT 和 RH6 (使用 N 式钉)

Panasert RH and RH6 shall be used as the standard inset machine (use N type clinch)

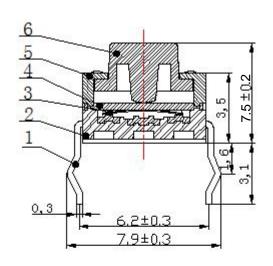
3.5 产品应满足 SONY-SS-00259 环境管理物质管制标准

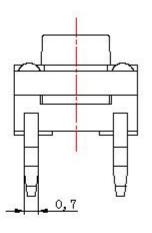
Control hanzardous substance: The product should be meet SONY-SSS-00259 speciffication.

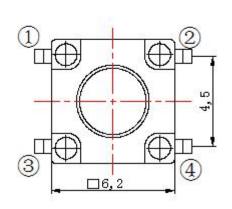
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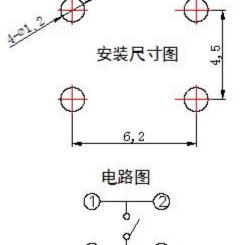


CUSTOMER	CUSTOMER'S P/N	GYE'S P/N	PRODUCT	REVISION
		KAN0616-0751B-CL15	TACT SWITCH	А









General tolerance: ±0.2mm H=5.0mm

NO.	NAME	MATERIAL	QTY.	FINISHING
1	TERMINAL	Brass	1	Silver plating
2	CASE	PPA	1	Black
3	CONTACT	F.Ag SUS	1	Contact side silver plating
4	防水垫	硅橡胶	1	Black
5	COVER	PPA	1	Black
6	STEM	PPA	1	Black

APPROVE BY 彭 飞 2019.3.27 CHECKED BY 刘叶泉 2019.3.27 PRPARE BY 卢娇娇 2019.3.27



CUSTOME	ER ——		CUSTOMER'S	S P/N	G'	YE'S P/N		PRODUCT		REVISION	
					KAN06	16-0751B-C	L15	TACT SWITCH	1	Α	
变更履品	万表	. :									
版本				变更记录				变更人	7	变更日期	
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APPROVE	BY	彭	飞 2019.3.27	CHECK	ED BY	刘叶泉 201	19.3.27	7 PRPARE	BY	卢娇娇 2019.3	.27