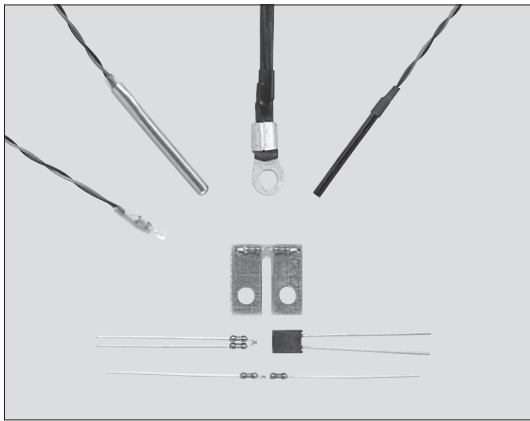


ST 温度传感器 Thermal Sensors



■ 特点 Features

- ST系列的温度传感器全是定制品。ST系列，提供合乎环境的特殊形状，主要是白金薄膜温度传感器（SDT101、SDT310系列）传感器部分的形状，从简单的树脂模压，到SUS316的金属保护管密封，对应各种形状。
- 带无铅符号“F”产品符合欧盟RoHS。
- All ST-series thermal sensors are custom-made products. ST-series thermal sensors are designed in various shapes in accordance with your application using a platinum thin-film thermal sensor (SDT101 · SDT310series) as an element. Shapes of sensor parts can be designed flexibly to meet your shapes and dimensional needs, from simple resin mold parts to sensor parts sealed in metal protective tubes made of SUS316.
- Products with Pb Free symbol “F” meet EU-RoHS requirements.

■ 用途 Applications

- 工业用设备：环保试验设备、恒温槽、pH计、温度调节器、流量计等。
- 厨房业务用：自动销售机、油炸机、蒸汽对流炉。
- 汽车：请另行咨询。
- Industrial Equipment : Environment testing machines, Constant-temperature ovens, pH meters, temperature controllers, mass flow meters ,etc .
- Service Applications : Vending machines, fryers, steam convection ovens, etc.
- Automotive : Please ask us for detail.

■ 品名构成 Type Designation

实例 Example

ST3000系列 ST3000 series

ST	3105201	F	A	X	1K	B	D
品种 Product Code	产品号 Product No.	无铅符号 Pb Free Symbol	元件种类 Element Type	基准温度 Reference Temperature	公称电阻值* Nominal Resistance	阻值允许偏差* Resistance Tolerance	电阻温度系数* 允许偏差 T.C.R.Tolerance
			A:SDT101	X:0°C	100:100Ω 500:500Ω 1K:1kΩ	B:±0.1% C:±0.2% D:±0.5% F:±1%	D:±0.5% F:±1% G:±2%

※该规格为内部元件的值。
These are specified for inner element itself.

ST8100系列 ST8100 series

ST	8102201	F	B	X	1K	B
品种 Product Code	产品号 Product No.	无铅符号 Pb Free Symbol	元件种类 Element Type	基准温度 Reference Temperature	公称电阻值* Nominal Resistance	等级* Class
			B:SDT310LTC C:SDT310P	X:0°C	100:100Ω 500:500Ω 1K:1kΩ	B:±(0.3+0.005 t) C:±(1.0+0.01 t)

ST3000系列，也制作基准温度25℃（但电阻温度系数为0℃/100℃）的产品。请商谈。

欲知关于此产品含有的环境负荷物质详情（除EU-RoHS以外），请与我们联系。

ST3000 series products with a reference temperature of 25℃(T.C.R. will be calculated between 0℃/100℃) are also available. Contact us.

Contact us when you have control request for environmental hazardous material other than the substance specified by EU-RoHS.

■ 规格 Specifications

① 温度传感器ST3000系列和ST8100系列所使用元件和制作范围。

Elements used for Thermal Sensors ST3000 and ST 8100 Series, and Manufacturing Ranges.

系列名 Series	使用元件 Element	在0℃时的电阻值 Resistance Value	等级：对测定温度的允许偏差 Class:Tolerance to Measuring Temp.	阻值允许偏差 Resistance Tolerance	电阻温度系数（×10 ⁻⁶ /K） T.C.R.	电阻温度系数允许偏差 T.C.R. Tolerance
ST3000系列 ST3000 series	SDT101A SDT101B	100Ω 500Ω 1kΩ	-	B:±0.1% C:±0.2% D:±0.5% F:±1%	3500	D:±0.5% F:±1% G:±2%
ST8100系列 ST8100 series	SDT310LTC SDT310P	100Ω 500Ω 1kΩ	B:±(0.3+0.005 t) C:±(1.0+0.01 t)	-	3850	-

ST3000系列的电阻值1KΩ品、阻值允许偏差B.C的制品，是把SDT101系列2个组合起来制作的。

还有，ST3000系列的阻值允许偏差B和T.C.R允许偏差D的组合，成为对测定温度允许偏差SDT310的B级相当品。

ST3000 Series, 1kΩ, resistance tolerance B · C are produced in pair of SDT101Series.

The combination of ST3000 series, resistance tolerance B-T.C.R. and tolerance D is equivalent to class B of SDT310 tolerance to the measuring temperature.

② 关于ST3000系列和ST8100系列的形状和细节。 Shapes and particulars of ST3000 and ST8100 series.

下页上介绍ST3000系列和ST8100系列的一部分。关于详细规格，由于你已另外有了目录，请到最近的营业所询问。

ST3000 and ST8100 series are partially presented on the next page. Refer to our nearest sales office for the specifications on the separate catalogs.

③ 保护管加工例 Example of Processing Protective Tubes

材料 Material	Material
PPS	
环氧树脂涂层	Epoxy Resin Coating
氟树脂收缩管	Fluorine Resin Shrinkage Tube
聚酰亚胺	Polyimide
SUS304	
SUS316	
铜	Cu

安装端子加工 Processing of Fitting Terminals

⑤ 端子加工例 Example of Processing of Terminals

接续端子加工	Processing of Connecting Terminals
--------	------------------------------------

④ 外部导线加工例 Example of Processing External Conductors

材料 Material	Material
聚氨酯被复线	Polyurethane Coated Wire
平行耐热氯乙烯电线	Parallel Heat-Resistant Vinyl Chloride Wire
氟树脂被复电线	Fluorine Resin Coated Wire

加工 Form	Form
2线式	2-Wire System
3线式、4线式	3-Wire · 4-Wire System
屏蔽线	Shielded Wire

⑥ 其它 Others

打印电路板装载	Mounting on Printed Circuit Board
---------	-----------------------------------

性能 Performance

ST3000系列 ST3000 series 部分摘录 (A part extract)

形状 Shape	单位 Unit : mm	产品号 Product No.	L (mm)	ℓ (m)	测定温度范围 Measurement Temperature Range
<p>镍 Nickel</p> <p>SDT101B</p> <p>焊接 Welded</p> <p>φ 1.5</p> <p>φ 0.4</p> <p>30±3</p> <p>13max.</p> <p>30±3</p>		31011 ●导线 无焊接电镀 ●Lead wire without solder plating	—	—	-50°C~+300°C
		31012 ●导线 有焊接电镀 ●Lead wire with solder plating	—	—	-40°C~+120°C
<p>SDT101B</p> <p>镍 Nickel</p> <p>焊接 Welded</p> <p>4max.</p> <p>7max.</p> <p>30±3</p>		31021 ●导线 无焊接电镀 ●Lead wire without solder plating	—	—	-50°C~+300°C
		31022 ●导线 有焊接电镀 ●Lead wire with solder plating	—	—	-40°C~+120°C
<p>氟树脂收缩管 Fluorine Resin Heat Shrinkage Tube</p> <p>0.08氟树脂绝缘线 (红、黑) 0.08-square parallel fluorine resin wire (Red, Black)</p> <p>φ3max.</p> <p>L</p> <p>ℓ</p> <p>(10)</p>		31050201	23max.	0.1	-40°C~+220°C
		31050205		0.5	
		31050210		1.0	
		31050230		3.0	
<p>SUS304</p> <p>0.08氟树脂绝缘线 (红、黑) 0.08-square parallel fluorine resin wire (Red, Black)</p> <p>铆接 Caulking</p> <p>φ3</p> <p>4max.</p> <p>(*)</p> <p>L</p> <p>(5)</p> <p>ℓ</p> <p>(10)</p>		31060301	30	0.1	-40°C~+220°C
		31060305		0.5	
		31060310		1.0	
		31060330		3.0	
		31060501	50	0.1	
		31060505		0.5	
		31060510		1.0	
		31060530		3.0	
* 电阻值 1kΩ 或电阻容许 B、C 的产品。只有 L=50mm。 * For product of resistance 1kΩ or product of resistance tolerance B, C, only L=50mm is available.					
<p>焊接电镀软铜线 Tin plated copper wire</p> <p>PPS</p> <p>t=2.7</p> <p>φ0.4</p> <p>5.0</p> <p>6.5</p> <p>30</p>		3201	—	—	-20°C~+120°C
<p>2-φ3.5</p> <p>玻璃环氧树脂基板 Glass epoxy</p> <p>15.4</p> <p>8.9</p> <p>4</p> <p>15.0</p> <p>焊接 Welded</p> <p>SDT101B</p>		3202	—	—	-40°C~+140°C
<p>铜 (镀锡) Copper (Tin plating)</p> <p>φ3.7</p> <p>7.2</p> <p>7min.</p> <p>15.7</p> <p>(21)</p> <p>热收缩管 Heat Shrinkage Tube</p> <p>ℓ</p> <p>(10)</p> <p>0.3平行耐热氯乙烯线 (黑) 0.3-square parallel resistant vinyl chloride wire (Black)</p>		32050001	—	0.1	-20°C~+80°C
		32050005		0.5	
		32050010		1.0	
		32050030		3.0	
<p>聚酰亚胺 Polyimide (Brown)</p> <p>热收缩管 Heat shrinkage Tube</p> <p>φ2max.</p> <p>L</p> <p>ℓ</p> <p>(10)</p> <p>0.08氟树脂绝缘线 (红、黑) 0.08-square fluorine resin covered wire (Red, Black)</p>		32090201	24	0.1	-40°C~+220°C
		32090205		0.5	
		32090210		1.0	
		32090230		3.0	

本样本手册中记载的产品规格如有变更，恕不一一奉告。订购以及使用之前，请仔细确认规格表的内容。

用于车载设备、医疗设备、航空设备以及其他涉及人身安全、或可能引起重大损失的设备上时，请务必先与我公司联系。这些产品在这类用途中出现故障或失灵可能导致人身事故或严重损坏。

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.

Contact our sales representatives before you use our products for applications including automobiles, medical equipment and aerospace equipment.

Malfunction or failure of the products in such applications may cause loss of human life or serious damage.

Mar. 2015

形状 Shape	单位 Unit : mm	产品编号 Product No.	导线数 Lead Wire Number	尺寸(m) Dimension	测定温度范围 Measurement Temperature Range
<p>* 使用时, 请固定圆形端子, 在不给电线施加拉伸应力和弯曲应力的状态下使用。 2 wire: Red Black 3 wire: Red Black Black</p>		8102201	2	0.1	SDT310LTC : -40°C ~ +105°C SDT310P : -40°C ~ +200°C
		8102205		0.5	
		8102210		1	
		8102301	3	0.1	
		8102305		0.5	
		8102310		1	
<p>2 wire: Red Black 3 wire: Red Black Black</p>		8103201	2	0.1	SDT310LTC : -40°C ~ +105°C SDT310P : -40°C ~ +200°C
		8103205		0.5	
		8103210		1	
		8103301	3	0.1	
		8103305		0.5	
		8103310		1	
<p>2 wire: Red Black 3 wire: Red Black Black</p>		8104201	2	0.1	SDT310LTC Only: -40°C ~ +105°C
		8104205		0.5	
		8104210		1	
		8104301	3	0.1	
		8104305		0.5	
		8104310		1	
		8106201	2	0.1	SDT310LTC Only: -40°C ~ +125°C
		8106205		0.5	
		8106210		1	
		8107301	3	0.1	SDT310LTC Only: -40°C ~ +150°C
		8107305		0.5	
		8107310		1	

■ 选择上的注意事项 Instructions in Selection

- ST的电阻值, 由在ST上所用元件(SDT101、SDT310)的电阻值规定。因而外部导线的电阻被加算在元件电阻值上, 对温度测定误差带来影响。因此, 外部导线越短, 误差越少。例如, 在SDT101上使用了100Ω的元件的ST时, 外部导线电阻值如果是1Ω, 就出现2.9°C的检测误差。为了要消除由于外部导线的电阻的测定误差, 应选择3线式、4线式。
- 传感器元件有着足够的耐热特性, 但使用温度范围因外部导线和充填剂等的材料而有不同。应当根据使用温度范围和使用环境, 选择适当的传感器。
- ST的质量保证, 为元件的质量保证。
- Sensor resistance values described are specified by resistance values of the elements (SDT101,SDT310) used in the sensors. The resistance of the external conductor is added to the resistance value of element, impacting errors in temperature measurement. For this reason, the shorter the conductor is, the smaller the errors will be. For example, when a ST using element of SDT101 a 100Ω, a 2.9°C detection error will result, assuming that the resistance of the external conductor is 1Ω. Select 3-wire or 4-wire system so that a measurement error by the resistance of an outer lead wire can be eliminated.
- Sensor elements have a sufficient heat resistance characteristic. Nevertheless, the operating temperature range will differ depending on the materials used in the external conductor and filler. Select an appropriate standard sensor in accordance with the operating temperature range and operating environment.
- Quality of ST is guaranteed by the element.

■ 产品保修 Guarantee of product

产品保修为购入后一年。

但是, 如果在保修期内因我们的责任出现故障时, 我们会更换或修理该产品。另外, 这里指的保证是单一产品保修引起损害的缺陷的产品, 将被免除责任。

The guaranteed term of the product is one year after delivery. However, when trouble occurs during the guaranteed term because of our responsibility, the product is exchanged or is repaired. We guarantee the product itself, any damages caused by this product shall be excused.