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空调压力温度传感器(NTC包覆式)
AC Pressure and Temperature Sensor (NTC encapsulated)



产品介绍 Product Description

包覆式空调压力温度传感器由压力传感器与温度传感器两者合二为一组成压力温度传感器,提供信号给空调控制器。

The sheathed AC P-T sensor is composed of pressure sensor and temperature sensor, 2 sensors into 1 product，provide signals to AC controller.

产品特征及优势 Feature and Benefits

- AC P-T可以提供两个信号。
  The AC P-T sensor provides two refrigerant pressure and temperature outputs.
- 采用陶瓷电容技术，兼具高精度和优良的稳定性。
  With ceramic capacity technology, with both high accuracy and long-term stability.
- 来源于热敏电阻的冷媒温度信号。
  AC Refrigerant temperature output from an NTC thermistor.
- 利用 O 型圈进行结构密封，激光打标以得到更好的追溯性。
  Sealing achieved by O-ring, laser marking for better traceability.
- NTC 包覆式结构，保证 NTC 对各种介质，尤其是导电介质的耐受性。
  NTC encapsulated structure ensuring NTC resistance to various media, especially conductive media.
- 金属外壳中高导热胶填充，实现快速温度热响应，液体中 T63 < 3s 。
  Metal housing filled with high thermal conductivity adhesive for fast thermal response; T63 < 3s in liquid.
- 根据客户要求，0~4MPa范围内，压力量程可定制。
  Different pressure ranges are available on customer request.
- -40~140℃范围内，温度特性曲线可系列化选择。
  Temperature curve can be series selected in the range of -40~140℃.
- 接插件及压力接头可定制。
  Connector and pressure port can be customized.

产品应用 Application

根据 AC P-T 输出的冷媒压力、温度信号，配合其他空调信号，空调控制器可以调节压缩机排量、电子膨胀阀及冷凝风扇，实现冷媒回路精准控制、舱内恒温及系统高低压保护。

With refrigerant pressure and temperature signals from the AC P-T sensor, together with other AC signals, the HVAC controller modulates compressor displacement, electronic expansion valve and condenser fan to achieve precise refrigerant loop control, stable cabin temperature and system high/low pressure protection.

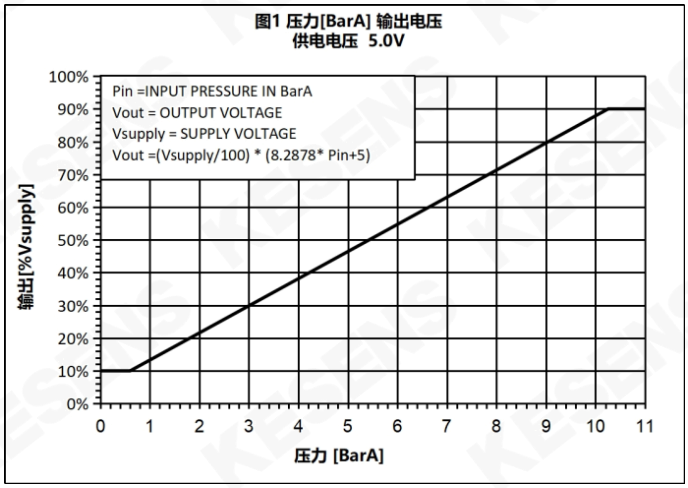
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操作 Operation

基本原理 Basic Principle

空调压力温度传感器压力部分,是通过陶瓷电容感应空调管路内介质的压力变化，将其转化为压力敏感元件的电容值变化，然后通过调理电路进行处理放大，转换成电压信号。温度部分由一个负温度系数热敏电阻，当温度升高，电阻减小，当温度降低，电阻增大，通过分压电路，可以将电阻阻值转化为电压信号。

With ceramic capacitive technology, the pressure of the medium in the pipeline is converted into capacitance variation of the pressure-sensitive element, and then processed into a voltage signal by the conditioning module. The temperature part uses a negative temperature coefficient thermistor; its resistance decreases as temperature rises, and the resistance value is converted into a voltage signal through a voltage divider circuit.



R25=10.00KΩ±1%; B(25/100)=3950K±1%; 温度/阻值			
T[° C]	R nom[KΩ]	R min[[KΩ]	R max[[KΩ]
-40	302.41	289.35	316.03
-30	163.51	157.41	169.82
-20	91.62	88.72	94.61
-10	53.12	51.72	54.56
0	31.8	31.12	32.5
10	19.62	19.29	19.95
20	12.44	12.29	12.59
25	9900	10000	10100
30	8.089	7.991	8.187
40	5.385	5.298	5.473
50	3.663	3.59	3.737
60	2.542	2.482	2.602
70	1.796	1.748	1.845
80	1.291	1.252	1.33
90	0.942	0.9108	0.9741
100	0.6975	0.6724	0.7235
110	0.5235	0.5032	0.5445
120	0.3977	0.3813	0.4149
130	0.3057	0.2923	0.3197
140	0.2376	0.2265	0.2491

连接选项 Connection Options

根据客户选择定制连接系统。

Customized to customer choice of connection system.

包装选项 Packaging Options

可提供定制包装以满足任何需要，请联系KESENS技术部了解详情。

Custom packaging can be provided to meet any need, please contact KESENS Engineering for details.

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技术参数 Functional Characteristics

参数PARAMETER	符号SYMBOL	最小值MIN.	额定值NOM.	最大值MAX.	单位UNITS
工作温度 TEMPERATURE RANGE	T	-40		135	℃
压力测量范围 （可定制） PRESSURE RANGE （Customizable）	P	0.6		10.25	bar
电源电压 SUPPLY VOLTAGE	Vcc	4.75	5	5.25	V
供电电流 SUPPLY CURRENT	Icc			15	mA
输出电流 OUTPUT LOAD CURRENT	I_L			10	mA
额定输出电压（可定制） NOMINAL OUTPUT （Customizable）	Vout	10		90	%Vcc
压力精度误差 PRESSURE ACCURACY ERROR	Err			3	%Vcc
压力响应时间 PRESSURE RESPONSE TIME	T_{RP}			10	ms
温度响应时间 TEMPERATURE RESPONSE TIME	T_{RT}			3	s

可根据客户需求定制产品，如有需求请联系我们。
Customized products available upon request. Contact us for details.

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