

博特固定在线工业红外测温仪 (BT8000B系列)



概述

BT8000B系列为一体集成式红外测温变送器，传感器、光学系统与电子线路共同集成在不锈钢外壳或铝合金体内；易于安装，壳体上的标准螺纹可与安装部位快速连接。

红外测温原理

任何物体都向外发射红外辐射，辐射强度随温度的变化而变化，红外测温使用了热辐射中的波长为8-14um范围内波长。

红外测温仪是一种热电子传感器，它接收红外辐射并将其转换成可测量的电信号，主要包括以下组件：

- 光谱滤波器
- 探测器
- 电子线路（放大器 / 线性化 / 信号处理）

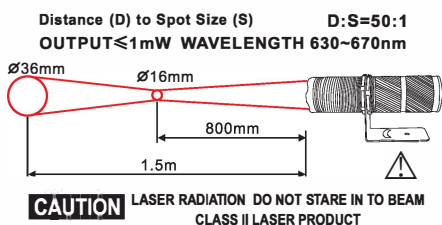
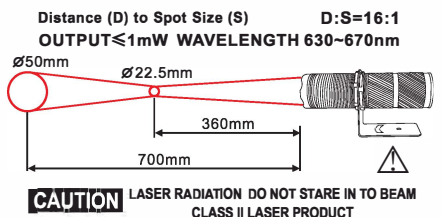
透镜的规格决定了红外测温仪的光路。光谱滤波器选择与测温相关的波谱范围。探测器与电子线路一起将红外辐射的能量转变成电信号。

主要特点

- 高精度
- 高光学分辨率
- 坚固的金属外壳
- 测温范围广：-50°C~1800°C，温度范围可选
- 输出方式：4~20mA
- 目标尺寸：16cm
- 主体尺寸：Φ60mm×198.5mm

被测量点的最大距离和尺寸

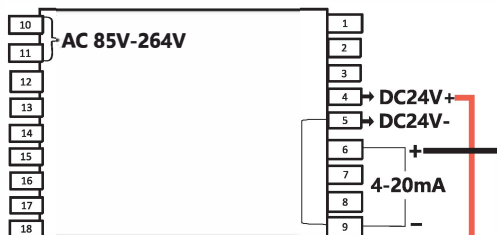
被测目标的尺寸和红外测温仪的光学特性决定了被测目标和测量头之间的最大距离。为了避免测量误差，应保持被测点始终小于被测物体或至少与被测目标相同尺寸。



应用范围

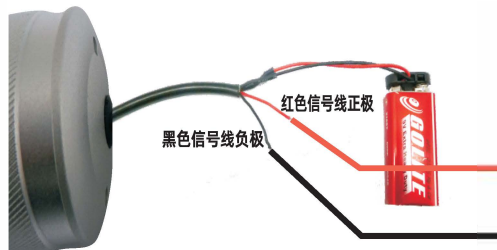
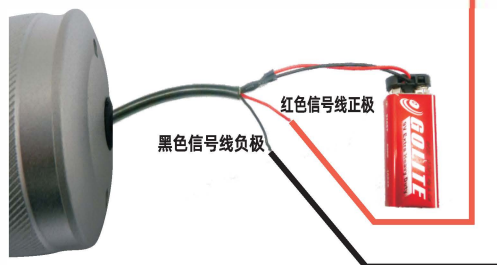
本产品适用于石油化工、电力、轻工业、纺织业、食品行业、国防以及科研等领域。

产品型号	B T8300B / B T8600B / B T8012B / DT8018B
量程范围	BT8300B : -50°C~300°C
	BT8600B : -50°C~600°C
	BT8012B : -50°C~1200°C
	BT8018B : -50°C~1800°C
光谱范围(波长)	8~14μm
距离系数(D:S)	16 : 1 50 : 1
响应时间	500ms
测温精度	≤100°C ±2°C, ≥100°C ±2%
重复精度	±1% 或 ±1°C
发射率	0.95 (出厂预设)
供电电压	DC 9~24V
最大电流	50mA
模拟输出	RT-A: 4~20mA
隔离	电源、数字输出、模拟输出，都是相互隔离的，互不干扰
防护等级	IP54
环境温度	0~50°C
存储温度	-20~50°C
相对湿度	10~95%
外壳	铝合金或不锈钢 (可选)
电缆长度	4m标配，可定制5m、10m及特殊规格
CE认证	符合欧盟抗电磁干扰标准
使用仪器测量时 注意事项	①. 此仪器不建议用于光亮或抛光金属表面 (不锈钢、铝等有色金属物体) 的测量；反光会影响测量的准确度。 ②. 不能透过玻璃的表面温度进行测定，它测定的将是玻璃的表面温度。 ③. 蒸汽、灰尘、烟雾等会影响测量的准确度。



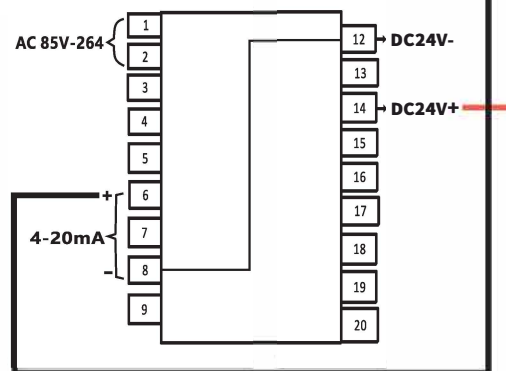
接线举例说明

1. 交流电压85V-264V 接10-11端口。
2. 信号线红色线 接端口4 (DC24V+)。
3. 信号线黑色线 接端口6。
4. 端口5 (DC24V-) 接端口9连接短路。(见图)
5. 激光接9V电池，用于固定安装前瞄准使用。



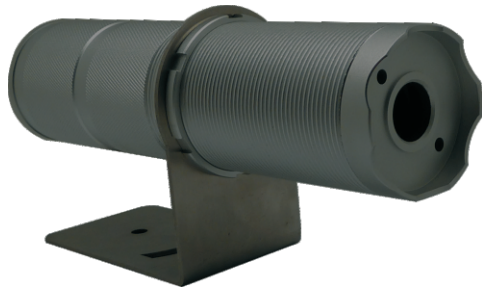
接线举例说明

1. 交流电压85V-264V 接1-2端口。
2. 信号线红色线 接端口14 (DC24V+)。
3. 信号线黑色线 接端口6 电流正极。
4. 端口8与端口12 连接短路。(见右图)
5. 激光接9V电池用于固定安装前瞄准使用。



Infrared temperature transmitter

Operation manual



Description

As a integrated transmitter infrared thermometer, DT8000B have the integration of the sensor, the optical system and the electronic circuit inside its stainless steel or aluminium alloy shell. It can be installed very conveniently by making the standard screw thread on the product be joined with the installation position.

The principle of temperature measurement by infrared

Any object transmits the infrared radiation, and the radiation intensity varies with temperature. Infrared temperature measurement uses thermal radiation within the range of wavelength 8-14um.

The infrared thermometer is a kind of hot-electron sensor which can receive the infrared radiation and transform it to a measurable electric signal, and its main assemblies are as following:

- Lens
- Spectrum filter
- Detector
- Electronic circuit (Amplifier/ linearization/ signal processing)

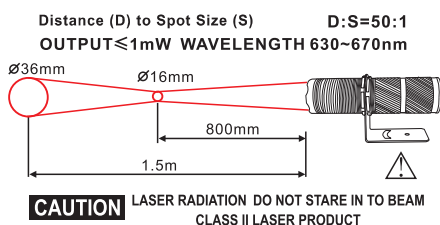
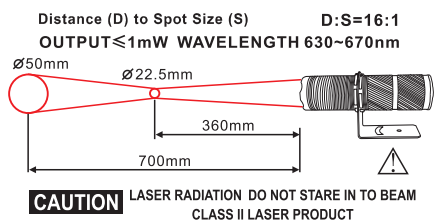
Light path of the infrared thermometer is determined by the specification of lens. The spectrum filter can choose the best spectral range for temperature measurement. The power of infrared radiation can be transformed to electric signal by detector and electronic circuit.

Main features

- High precision
- High optical resolution ratio
- Firm metal shell
- Large temperature range: -50°C~1800°C (-58°F~3272°F) Temperature range is optional
- Output: 4-20mA
- Optimum test distance: 16cm
- Size: Φ60mm×198.5mm

The longest test distance to the target tested

The longest test distance between the product head and the target tested are decided by the size of the target and optical characteristics of the infrared thermometer. To avoid measurement errors, the size of the target should be larger or same size of the test spot of infrared.



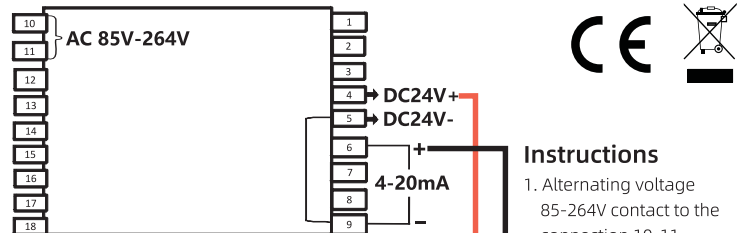
Specification

This product is perfect for petrochemical industry, power industry, light industry, textile industry, food industry, national defense industry sector and scientific research etc.

Model	DT8300B / DT8600B / DT8012B / DT8018B
Temperature range	DT8300B : -50°C~300°C (-58°F~572°F)
	DT8600B : -50°C~600°C (-58°F~1112°F)
	DT8012B : -50°C~1200°C (-58°F~2192°F)
	DT8018B : -50°C~1800°C (-58°F~3272°F)
Spectral Response	8~14um
Distance Spot Ratio (D:S)	16 : 1 50 : 1
Response Time	500ms
Accuracy	≤100°C ±2°C, ≥100°C ±2%
Repeatability	±1% or ±1°C
Emissivity	0.95 fixed
Power	DC 9~24V
The maximum current	50mA
Analog output	RT-A: 4~20mA
Isolation: Power, digital output and analog output are isolated and do not interfere with each other.	
Protection level	IP54
Environmental temperature	0~50°C (32~122°F)
Storage temperature	-20~50°C (-4~122°F)
Relative humidity	10~95%
Shell material	Aluminium alloy or stainless steel (Optional)
Standard wire length	4m (or can be 5m or 10m or other length you need)
With CE approval and protection against electromagnetic disturbance for EU standard.	

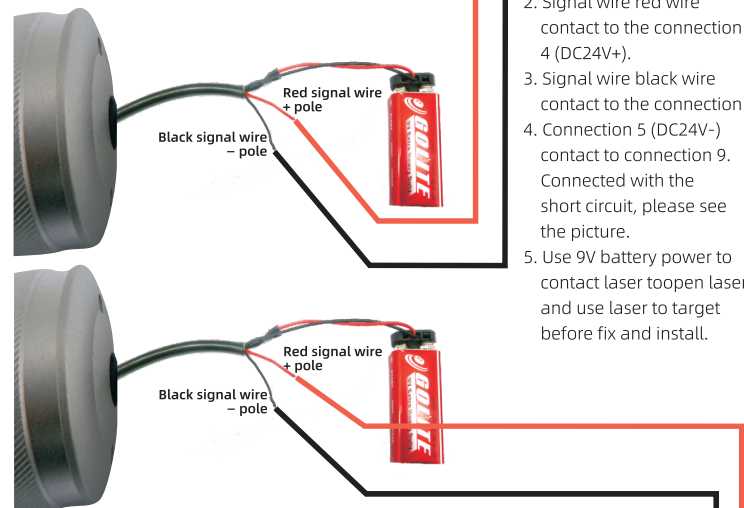
Cautions:

- ①. This instrument is not recommended for the measurement of bright or polished metal surfaces (non-ferrous metal objects such as stainless steel, aluminum, etc.); The reflections will affect the accuracy of the measurement.
- ②. The temperature can not be measured through the glass, otherwise the temperature value will only be the surface temperature of the glass.
- ③. The accuracy of the measurement will be affected by the steam, dust, smoke, etc.



Instructions

1. Alternating voltage 85-264V contact to the connection 10-11.
2. Signal wire red wire contact to the connection 4 (DC24V+).
3. Signal wire black wire contact to the connection 6.
4. Connection 5 (DC24V-) contact to connection 9. Connected with the short circuit, please see the picture.
5. Use 9V battery power to contact laser to open laser and use laser to target before fix and install.



Instructions

1. Alternating voltage 85-264V contact to the connection 1-2.
2. Signal wire red wire contact to the connection 14 (DC24V+).
3. Signal wire black wire contact to the connection 6.
4. Connection 8 contact to connection 12 to make short circuit, please see the picture.
5. Use 9V battery power to contact laser to open laser and use laser to target before fix and install.

