

## Compressed Air Heater



# Compressed Air Heater

## Introduction

The compressed air heater is used to heat compressed air online to meet the temperature requirements of customers for specific applications. It can achieve high-precision control and respond quickly when the air flow and pressure change, thus realizing accurate temperature control. The outlet temperature range of the heater is 20 - 120°C, and it is commonly used in industries such as the respiratory system, manufacturing and processing, and coating.

## Working principle

When compressed air flows through the heater, the temperature sensor at the outlet of the heater will measure the temperature of the compressed air. When the temperature does not meet the requirements, the heating unit will automatically heat.

The heater uses a digital cathode ray tube to display the real-time temperature. Temperature regulation is carried out through a potentiometer. The temperature measuring element and the control module complete measurement calculation and the control loop, realizing precise control of the heating wire assembly. The measurement signal is sent to the control module for amplification and comparison and then displayed on the display screen. At the same time, a 4 - 20 mA analog output can be provided to achieve remote external monitoring.

The heater consists of an electronic component control system, a temperature probe, an annular flow guide device, a cylinder, and a heating assembly. The heating element is in the form of a spiral tube, featuring high thermal efficiency, large heating area, uniform heating, and good mechanical strength.

The cylinder is equipped with an annular flow guide device to fix the heating element, which can not only concentrate the gas for heating but also form a gas insulation layer inside the cylinder, preventing heat from being transferred through the cylinder and thus avoiding heat loss.

All compressed air heaters are 100% tested for pressure and flow variation before leaving the factory to ensure the heating performance of the products and achieve accurate temperature control.



# Technical features and advantages

The housing is made of high-strength cast aluminum, with a maximum operating pressure of 1.6 MPa. The surface is treated with anodizing and anti-corrosion.

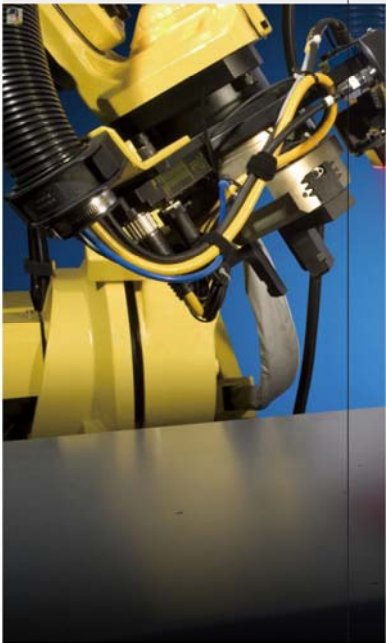
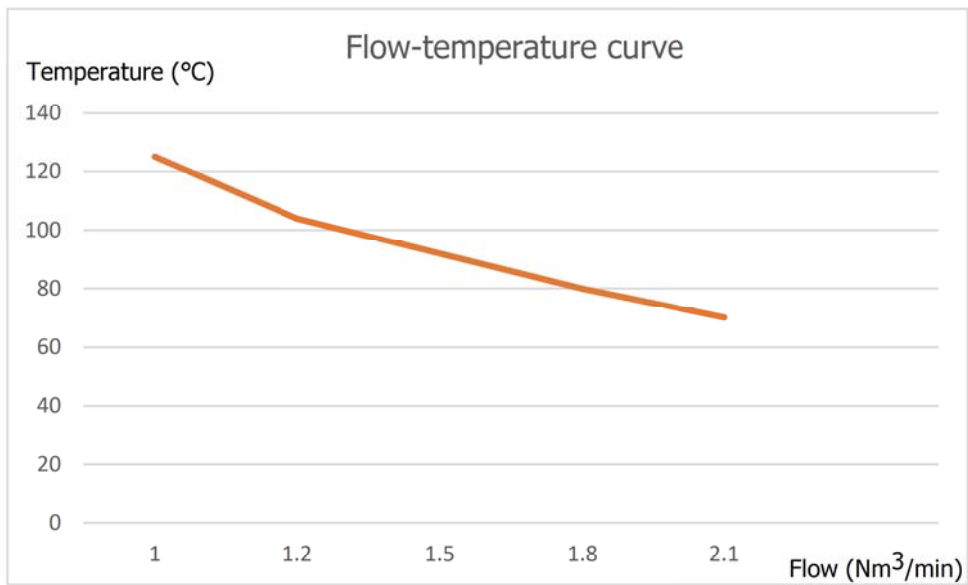
For compressed gas flow rate  $\leq 1 \text{ Nm}^3/\text{min}$ , the temperature can be controlled between room temperature and  $120^\circ\text{C}$ . For flow rates  $\geq 1 \text{ Nm}^3/\text{min}$ , please refer to the flow curve diagram.

The temperature regulation is fast and stable. When the flow rate is  $\leq 1 \text{ Nm}^3/\text{min}$ , the temperature remains unchanged regardless of pressure and flow rate variations. The temperature can be controlled within  $\pm 3^\circ\text{C}$ , and the heating rate can reach  $10^\circ\text{C/s}$ .

It has the function of remote transmission and monitoring of 4 - 20 mA temperature signals.

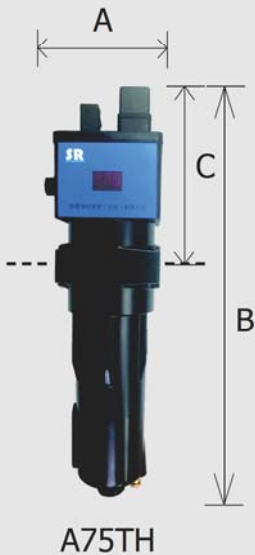
Equipped with a thermal fuse mechanism for the hot metal strip and the heating component, providing dual measures to ensure safety.

(Note: ① Hot metal strip: The maximum allowable temperature passing through the hot metal strip is  $150^\circ\text{C}$ . When there is a malfunction in the control system or temperature detection and continuous heating occurs, the hot metal strip mechanically cuts off the power supply to the heating component. ② Fuse mechanism: A mandatory measure of the heating component itself. When both the temperature control system and the hot metal strip fail or there is no source of heating medium, the heating component will be forcibly fused to protect the production safety of the production equipment.)

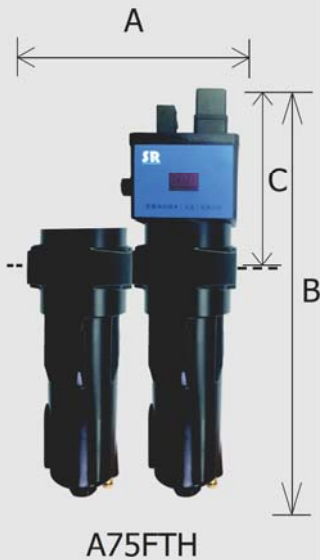




## Technical Specification



A75TH



A75FTH

Model	Pipe size	Maximum flow rate (Nm <sup>3</sup> /min)	Dimensions(mm)			Weight(Kg)
			A	B	C	
A75TH	Rc 3/4	2.0	110	395	160	1.2
A75FTH	Rc 3/4	2.0	200	395	160	2

### Technical Specification

Supply voltage: 220 VAC/50 Hz

Power rating: 2.35kw

Maximum working pressure: 1.6 MPa

Controlled output range: 20 ~ 120°C

Minimum inlet temperature: -20 °C

### Technical notes

- 1.If the compressed air contains liquids such as water and oil, the FTH series should be selected.
- 2.Electrical connections to the unit are via an industry standard DIN connector.
- 3.The outlet pipeline of the heater should be as short as possible, and appropriate insulation measures should be taken.
- 4.Please read the product manual carefully before installation, and install it in the direction indicated by the arrow on the product.
- 5.Before electrifying for test operation, it must be ensured that there is a heating medium (compressed gas) in the heater and the gas flow rate is  $\geq 3 \text{ Nm}^3/\text{h}$  before temperature adjustment can be carried out.
- 6.Before connecting the power supply, please first confirm that the temperature control adjustment knob is at the minimum value.
- 7.The protection level of this product is IP50, dust-proof but not waterproof. Please make corresponding treatments according to the actual installation environment.
- 8.The theoretical replacement cycle of the filter element is 12months or 8,000 hours (the specific cycle depends on the cleanliness of the air source).



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