

# DETECT-A-FIRE® Type 27121 in Enclosure

## FEATURES

- Resets itself, nothing to replace, testable
- Withstands shock and vibration
- Offers various temperature settings
- Contact area is hermetically sealed (IP67)

DETECT-A-FIRE units have met with wide acceptance because they are designed with RATE COMPENSATION. This provides a unique advantage over both fixed temperature and rate-of-rise types of detectors because only the DETECT-A-FIRE unit accurately senses the surrounding air temperature regardless of the fire growth rate. At precisely the predetermined danger point, the system is activated. Fixed temperature detectors must be **completely** heated to alarm temperature and therefore a disastrous lag in time may occur with a fast rate fire. Rate-of-rise devices, on the other hand, are triggered by the rate of increase in ambient temperature and are subject to false alarms caused by harmless, transient thermal gradients such as the rush of warm air from process ovens.

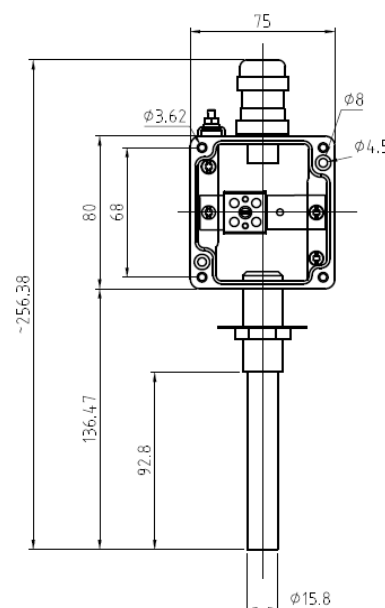
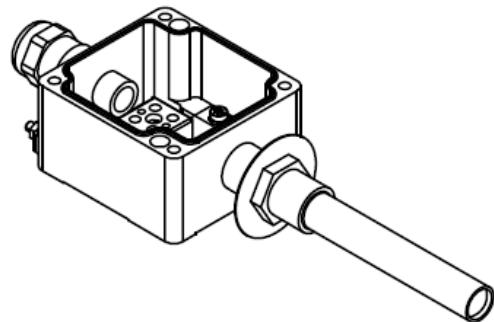
## Specification

DETECT-A-FIRE®	
Material	Sensor: Stainless Steel (model 300) Screw: brass Cable: to 190°C Teflon from 190°C TGGT
Dimension	125,4 mm x 25,4 mm (LxØ)
Weight	ca. 0,2 kg
Protection Class	IP 67
Contact	NO (24V, 2A)
Supervision area	Max. 30 m <sup>2</sup>
Ceiling height	Max. 6 m
Approvals	UL FM EN54-5
Enclosure	
Material	Alu-pressure casting
Dimension	80 mm x 57 mm x 59 mm (LxBxH)
Weight	ca. 0,3 kg
Protection Class	IP 64
Minimum ambient temperature	-20° C (non-condensing)
Cable thread	2 x PG9

## DETECT-A-FIRE® unit



## DETECT-A-FIRE® in Enclosure



## Available Alarm Temperatures

Model No.	Alarm Temperature	Contact
27121-0-140	60°C / 140°F	NO contact
27121-0-160	71°C / 160°F	NO contact
27121-0-190	87°C / 190°F	NO contact
27121-0-225	107°C / 225°F	NO contact
27121-0-275	135°C / 275°F	NO contact
27121-0-325	162°C / 325°F	NO contact
27121-0-360	182°C / 360°F	NO contact
27121-0-450	232°C / 450°F	NO contact
27121-0-600	315°C / 600°F	NO contact
27121-0-725	385°C / 725°F	NO contact

## Rate Compensation

The secret of the unit's sensitivity is in the design (Figure 1). The outer shell is made of a rapidly expanding alloy which closely follows changes in surrounding air temperature. The inner struts are made of a lower expanding alloy. Designed to resist thermal energy absorption and sealed inside the shell, the struts follow temperature changes more slowly. A slow rate fire (Figure 2) will heat the shell and struts together. At the "set point," the unit will trigger, actuating the alarm or releasing the extinguishant.

A transient rush of warm air up to 20°C/min. may expand the shell, but not enough to trigger the unit. By ignoring transient warm air excursions, the DETECT-A-FIRE unit virtually eliminates false alarms prevalent with rate-of-rise devices.

If a fast rate fire (Figure 3) starts, the shell will expand rapidly. The struts will close, actuating the alarm or releasing the agent. The faster the fire rate of growth, the sooner the DETECT-A-FIRE unit will react.

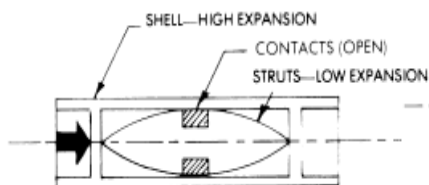


FIGURE 1: READY

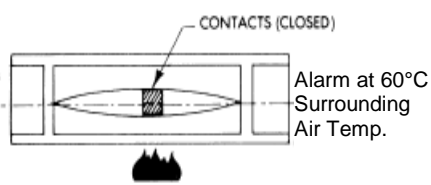


FIGURE 2: SLOW FIRE

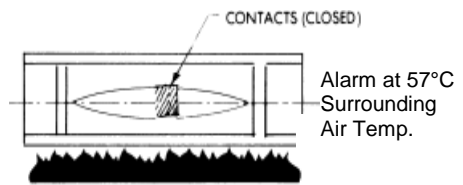


FIGURE 3: FAST FIRE