



# SL CYLINDER THERM C Selflimiting Heater

## 1 Application

The self-limiting electric conduction heater CYLINDER THERM is designed to heat stainless steel bottles and their contents.

One specific application might be analysing applications: the heating of the stainless steel oil sample bottles and their contents.

The CYLINDER THERM heater heats through conduction and its' large contact surface with the stainless steel bottle brings the heat into the sample much faster than through convection, hot air. The conduction heating principle is simple, reliable and economical. Conduction of heat through metal is more efficient than heating by means of air and much faster.

## 2 Special Features & Advantages

- Energy saving
- Self-limiting, no fusible link or limiter
- Requires little space

## 3 Performance

A conduction heater requires considerably less power than a finned convection heater, as the heat conducting qualities of metal are much better than those of air. The air surrounding the whole installation in the enclosure serves as additional insulation.

## 4 Technical Data

CSA Certificate	1655545 (LR43674)
Type of Protection	Cl. I, Div. 1, Group A,B,C,D, T3/T4
Ingress Protection	IP 68
Ambient temperature	-58 to 356°F/ -50 to +180°C
Material	seawater-proof aluminium, black anodized

All INTERTEC explosion-proof heaters can also be supplied

- to European ATEX standard (ATEX/ IEC).  
Ordering Example: SL CYLINDER THERM DLA T3 D
- as Bi-Standard (see datasheet HD508).



Picture 1: SL Cylindertherm CPA T3 D (D=Double cut outs)



Picture 2: SL Cylindertherm CPA T3 S (S=Single cut out)

## 5 Types (Other types upon request.)

Explosion-proof Models	SL CYLINDER THERM ...			
	CPA T3 D CPA T3 S	CLA T3 D CLA T3 S	CPA T4 D CPA T4 S	CLA T4 D CLA T4 S
Temp. Class	T3		T4	
Nom. Voltage	110 V to 265 V			
Nom. Power	150 W	80 W	100 W	50 W

Non Explosion-proof Models	SL CYLINDER THERM ...			
	NLA 50 D NLA 50 S	NLA 80 D NLA 80 S	NPA 100 D NPA 100 S	NPA 150 D NPA 150 S
Nom. Voltage	110 V to 265 V			
Nom. Power	50 W	80 W	100 W	150 W

## 6 Options

AM	Failure alarm opens at < 5°C
3M	Connection cable 3 m long

Not all options can be combined.

**Ordering example:**  
SL CYLINDER THERM CPA T3 S  
SL CYLINDER THERM NPA 150 D 3M



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## 7 Temperature management

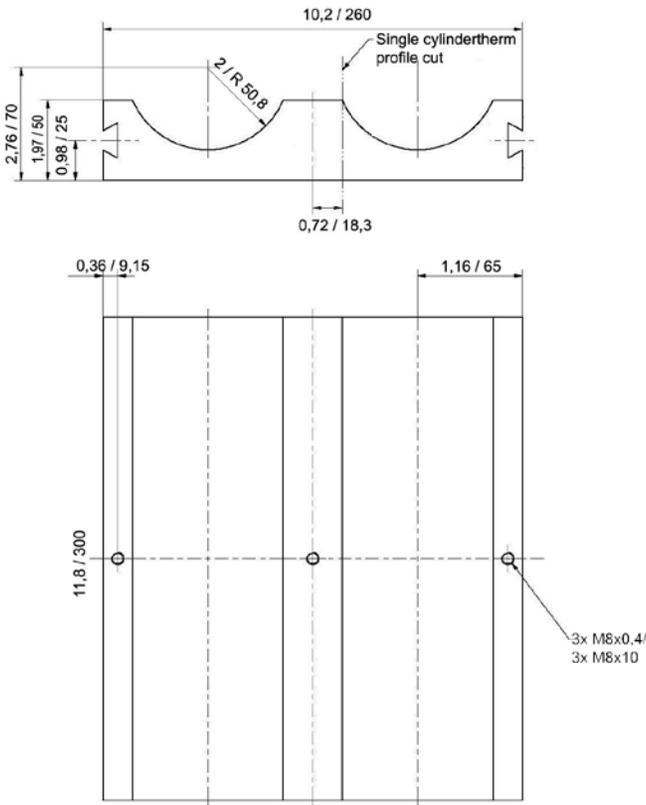
As the heater is self-limiting, it can operate without a temperature controller.

For applications which do not require a high temperature tolerance, the TAE or TS bi-metallic thermostat (data sheet HD223) is a good solution.

Should a high temperature accuracy be requested, the SMART heating system (data sheet HD128) should be used.

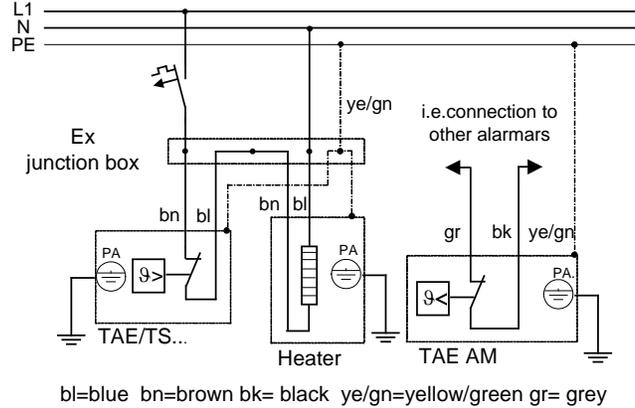
Self Limiting heaters should not be controlled by electronic controllers.

## 8 Dimensions



The profile can be individually machined to fit different cylinders.

## 9 Electric Wiring with a TS thermostat



## 10 Mounting

The CYLINDER THERM heater dissipates the heat by conduction and can be mounted in any position.

The Cylindertherm heater has M8 threads on both sides of the sample bottle cut out. Further details such as fastening of the sample bottle are left to the individual customer or can be arranged in cooperation with Intertec.

## 11 The heater cartridge

Inside the heater, there is a PTC heater cartridge. PTC-elements (Positive Temperature Coefficient) raise their electric resistance with rising temperature. High resistance means low heating power. The heating power gets very low at high temperatures so that the temperature cannot exceed the maximum temperature of the respective temperature class.

Further, the PTC-elements exhibit a varistor effect. They control their resistance according to the supply voltage being used. The nominal power supply voltage may be 100 V to 265 V with the same heater.

The inrush current may be 8 – 10 times greater as the nominal current during the first 1-2 seconds after power on.