

Temperature control of heat trace circuits in safe or hazardous areas

- Three wide span temperature ranges
- Stainless steel sensor and capillary tube
- Optional over-temperature lock-out
- Approved for use in Zone 1 and 2 hazardous areas
- Enclosures suitable for Gas groups IIA, IIB & IIC
- Stainless steel armoured capillary

FEATURES

Capstats are temperature adjustable ON-OFF thermostats comprising a liquid filled sensing bulb connected to an electrical switch via a capillary tube.

Expansion of the liquid on rise in temperature causes the switch to open, and on cooling, it closes.

Capstats may control surface temperatures such as pipes or vessels, or the sensing bulb may be positioned to sense the air temperature.

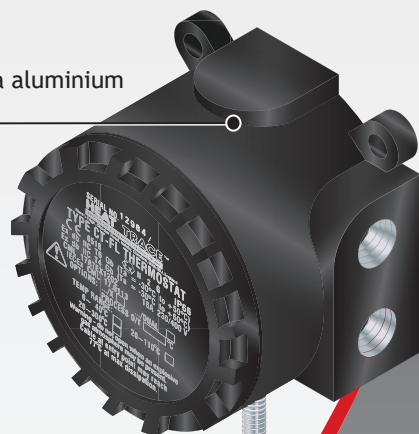
They may be used to provide process temperature control in safe or Zone 1 or 2 hazardous areas by switching the heating circuits at the desired temperature and are available to suit Group LLA, LLB or LLC gases.

The addition of a high limit cut-out switch (as provided with the Capstat-Dual version) is specified when the heat tracing scheme will not stabilise at a safe temperature without process control. It will operate if the process control switch fails or if an unsafe process temperature occurs.

OPTIONS

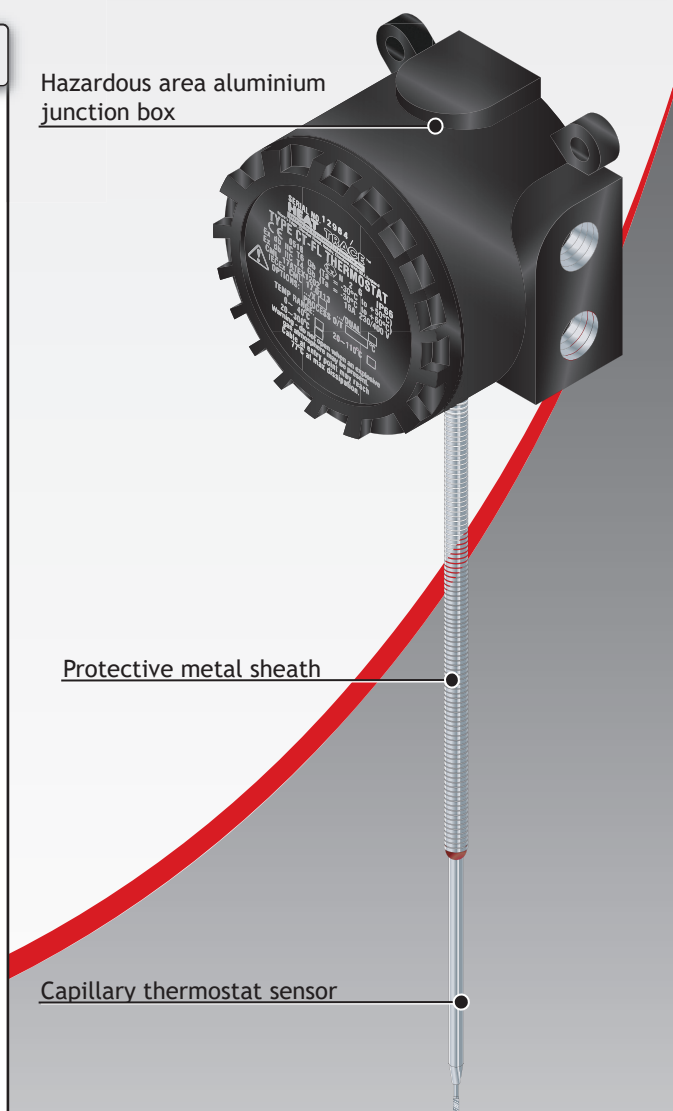
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|------------------------|--|
| CT-FL ../X | Hazardous area Ex'd Capstat suitable for use in Zone 1 and 2 hazardous areas, Gas Groups IIA, IIB and IIC. |
| CT-FL ../X/DUAL | Hazardous area Ex'd Capstat suitable for use in Zone 1 and 2 hazardous areas, Gas Groups IIA, IIB and IIC. Over-temperature lock-out (20° - 300° C) (Factory preset) |

Hazardous area aluminium junction box



Protective metal sheath

Capillary thermostat sensor



SPECIFICATION

THERMOSTAT SPECIFICATION

	Type A	Type B	Type C
Temp. range (°C)	0-40	20-110	20-300
Setting accuracy	±6	±6	±14
Switch differential (°C)	2±1.5k	4±2k	10±4k
Max. sensor temp (°C)	110	140	320
Min. sensor temp (°C)	-20	-20	-15
Capillary tube length (m)	1.5	1.5	1.5

Capillary tube material	Stainless Steel		
Capillary tube protection	Stainless Steel Conduit		
Sensor diameter (mm)	6	6	6
Sensor length (mm)	143.5	140	89.5
Sensor type	Liquid Filled		
Sensor Material	Stainless Steel		

SWITCH TYPE	Single Pole, Single Throw Changeover
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SWITCH RATING	16A (Max), 230V/400V resistive load
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SWITCH LIFE	100,000 operations
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TEMPERATURE SETTING ADJUSTMENT	Internal Tamperproof Knob
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INGRESS PROTECTION	IP66
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ENCLOSURE	CT-FL
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Material	Cast aluminium
Finish	Anodised black, Paint, Powder Coating or Epoxy
Conduit entries	3 x 16 - 25mm Diameter
Dimensions	130 x 130 x 93
Weight	4.3kg
Protection	Ex(db)
Area Suitability	Zone 1 or 2 IIA or IIB or IIC

TERMINALS	Electrical connections 2.5mm ² terminals (incoming/outgoing)
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MAX POWER DISSIPATION	16.80W
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ORDERING INFORMATION

Example	CT-FL/2C/A/X/DUAL
Capstat capillary thermostat	
Hazardous area version	
Temperature range (0 - 40°C)	
Armoured capillary	
Dual lock-out*	

* When ordering a Dual thermostat, please state the maximum permissible workpiece surface temperature (factory preset)

'DUAL' SPECIFICATION

	Low Temperature Thermostat	High Temperature Thermostat
Temperature Range	35 - 120°C	100 - 320°C
Switching Differential	+/- 4.5°C	+/- 8°C
Maximum Sensor Temperature	As indicated for types A, B or C as appropriate	
Probe Diameter x Length	Ø6mm x 1067mm	Ø3mm x 875mm

EARTHING

Internal and external earthing options available




'T' CLASSES

CT-FL	AJB/D
Ta = -30°C to +50°C = T6	Ta = -50°C to +50°C = T6
Ta = -30°C to +60°C = T4	Ta = -50°C to +60°C = T4

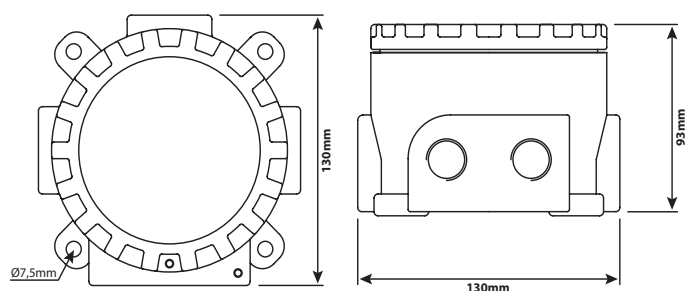
BLANKING PLUGS

The equipment is not supplied with blanking plugs or cable glands, it is the responsibility of the user to ensure that suitably certified glands/plugs are fitted that do not affect the type of protection. A bottom entry may also be fitted with Peppers type 781D breather / drain plug. (Sira 10ATEX1307U / IECEx SIR 10.0149U). Only use approved termination methods that are provided.

APPROVAL DETAILS - CT-FL

Testing Authority	Certificate No.
ATEX 	CML 17ATEX1202
IECEx 	IECEx CML 17.0113
EAC 	TC RU C-GB MIO62.B.06043

CT-FL/2C VERSION



Temperature control of
Heat Trace circuits in SAFE areas only.

CAPSTAT
Capillary Thermostats

- Three wide span temperature ranges.
- Stainless steel sensor and capillary tube.
- Optional stainless steel armoured capillary.
- Optional over-temperature lock-out.

FEATURES

Capstats are temperature adjustable ON-OFF thermostats comprising a liquid filled sensing bulb connected to an electrical contactor switch, via a capillary tube.

Expansion of the liquid on rise in temperature causes the contactor switch to open, removing power from the heating circuit. As a liquid cools, the switch closes, energising the heater(s).

Capstats may control surface temperatures such as pipes or vessels. Alternatively, the sensing bulb may be positioned to sense the air temperature.

Capstats may be used to provide process temperature control in safe areas, by switching the heating circuits at the desired temperature.

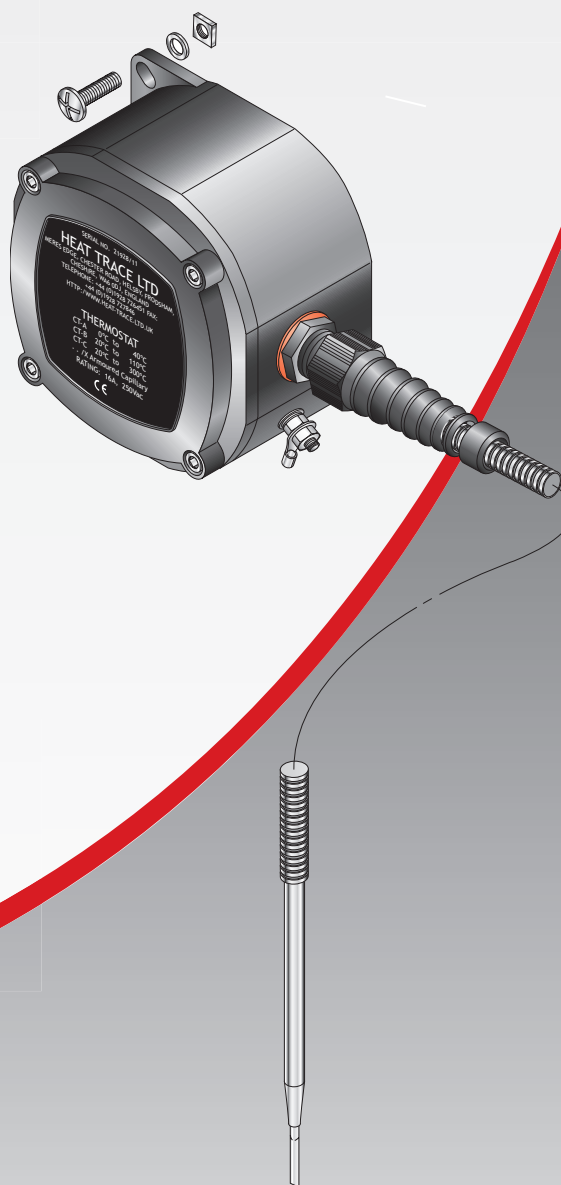
The addition of a high limit cut-out switch (as provided with the Capstat-Dual version) is specified when the heat tracing scheme will not stabilise at a safe temperature without process control. The high limit cut-out switch will operate if the process control switch fails, or if an unsafe process temperature occurs.

OPTIONS

CT	Capstat for use in safe areas.
CT../X	Optional armoured capillary provides additional mechanical protection for the capillary tube(s).
CT..DUAL	Over-temperature lock-out (20° - 300° C).

NOTE:

For certified hazardous areas, CT-FL Capstats are available (see separate datasheet).



CE

SPECIFICATION

THERMOSTAT SPECIFICATION:

	Type A	Type B	Type C
Temp Range (°C)	0-40	20-110	20-300
Setting Accuracy	±6	±6	±14
Switch Differential (°C)	2±1.5k	4±2k	10±4k
Max Sensor Temp (°C)	110	140	320
Min Sensor Temp (°C)	-20	-20	-15
Capillary Tube Length(m)	1.5	1.5	1.5
Capillary Tube Material	Stainless Steel		
Capillary Tube Protection	Stainless Steel Conduit (optional)		
Sensor Diameter (mm)	6	6	6
Sensor Length (mm)	143.5	140	89.5
Sensor Type	Liquid Filled		
Sensor Material	Stainless Steel		

SWITCH TYPE: Single Pole, Single Throw Changeover

SWITCH RATING: 16A (Max), 230/400V Resistive Load

SWITCH LIFE: 100,000 Operations

TEMPERATURE SETTING ADJUSTMENT: Internal Tamperproof Knob

ENCLOSURE:

	CT
Material	Glass Reinforced Polyamide
Finish	Matt Black
Conduit Entries	3 x 16 - 25mm Dia
Dimensions	121 x 121 x 76
Weight	0.9kg
Ingress Protection	IP66/68 (with suitable glands)
Area Suitability	Safe

TERMINALS:

Electrical connections 2.5mm² terminals (incoming/outgoing)

ORDERING INFORMATION:

Example **CT-A/X/DUAL**
 Capstat Capillary Thermostat
 Temperature Range (0-40°C)
 Optional Armoured Capillary
 Dual Lock-out*

*When ordering a dual thermostat, please state the maximum permissible workpiece surface temperature (factory preset).

'DUAL' SPECIFICATION:

	Low Temperature Thermostat	High Temperature Thermostat
Temperature Range	35 - 120°C	100 - 320°C
Switching Differential	+/- 4.5°C	+/- 8°C
Maximum Sensor Temperature	As indicated for types A, B or C is appropriate.	
Probe Diameter x Length	6mm x 1067mm	3mm x 875mm

EARTHING:

Internal and external earthing options available.

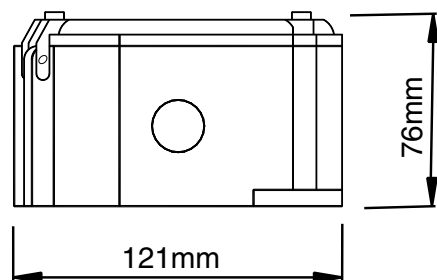
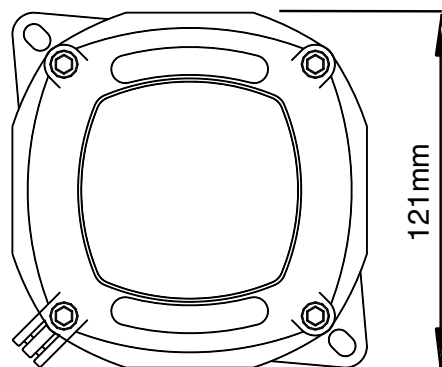
MINIMUM AMBIENT TEMPERATURE: -40°C (+40°F)

MAXIMUM AMBIENT TEMPERATURE: +50°C (+122°F)

BLANKING PLUGS:

The equipment is not supplied with blanking plugs or cable glands.

CT DIMENSIONS:



HEAT TRACE™

SETTING THE STANDARDS LEADING THE WAY

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HANEL

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