DL

Single Point On/Off Temperature Controls

Ambient Sensing
- **120 – 480 Vac**
- **0 – 225˚F Temp. Rating**
- **9/16" OD x 4" SS Probe**
- **Ordinary & Hazardous (Div. 2) Areas**

Bulb & Capillary
- **120 – 480 Vac**
- **0 – 400˚F Set Point Range**
- **1/4" OD x 7-1/4" SS Bulb, SS Capillary**
- **Ordinary & Hazardous (Div. 2) Areas**

Description

The DL Series Single Point On/Off Temperature Controls from Chromalox represents the state of the art in heat tracing accessories and are available in five models to handle a broad range of applications. Models include two ambient sensing thermostats and two line sensing thermostats. These high-quality models combine a variety of functions in a convenient, easy to use and economical package.

Applications

- Freeze Protection
- Hydrocarbon and Chemical Product Piping
- Process Temperature Maintenance
- Fluid Flow and Viscosity Maintenance

Approvals*

UL Listed for use in ordinary areas

CSA Certified for use in ordinary and
Class I, Div. 2, Groups A, B, C, D
Class II, Div. 2, Groups F, G

FM – Factory Mutual Certified for use in ordinary and
Class I, Div. 2, Groups B, C, D
Class II, Div. 2, Groups F, G
Class III, Div. 2 areas

* Depends on specific model

Features

- Integrated controls and power connections reduce installation hardware
- Molded of durable plastic material (Ryton® PPS)
- High service temperature
- Corrosion resistant
- Thermal stability
- Non-flammability
- High strength and rigidity
- Stainless Steel sensor sheaths
- Sealed Switches on EP models permit control in Div. 2 hazardous areas
- Stainless steel hardware to ensure the integrity of the system
- Cable terminations inside enclosure reduce installation time and cost
- Liquid-resistant design prevents moisture from reaching the electrical connections. All models are rated NEMA 4X.
- UL, FM, CSA is carried by most models, consult specific product information.

Ryton® is a registered trade name of Phillips Chemical Company.

Chromalox®
PRECISION HEAT AND CONTROL

PH: 888-996-9258 • FX: 615-793-3563

DL — Single Point On/Off Temperature Controls

Available Models

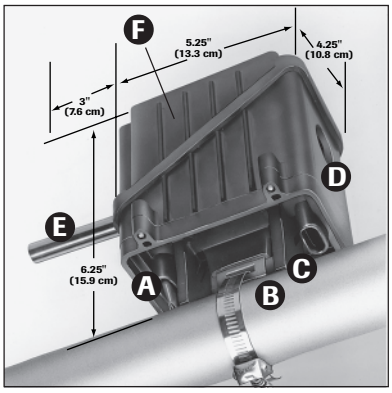
RTAS & RTAS-EP
Ambient Sensing
Model RTAS is an ambient-sensing thermostat which is generally used for freeze protection in ordinary (non-hazardous) areas. The thermostat is mounted through the end of the oblique sided enclosure lid. In fact, because there is so much room in this model, multiple heating cables can be terminated. The stainless steel sheathed, inverted bellows probe provides good sensitivity, resulting in more accurate control.

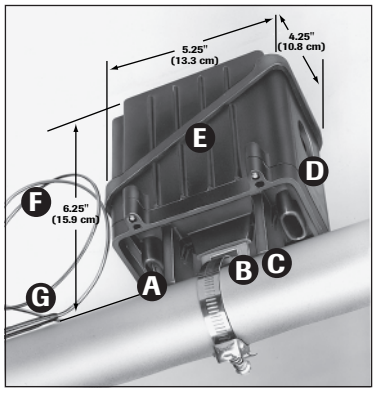
Model RTAS-EP is a modified version of the Model RTAS which utilizes a sealed switch. Since this switch has no arcing contacts it can be used in Division 2 Hazardous Areas.

RTBC & RTBC-EP
Bulb & Capillary
Model RTBC is a line-sensing thermostat which is generally used for process temperature maintenance applications in ordinary (non-hazardous) areas.
The thermostat is mounted within the enclosure and the capillary is brought out through one of the openings in the bottom of the box. This design provides extra protection for the capillary, especially when the control is mounted on a pipe, for heat tracing applications. The three foot long stainless steel capillary provides good flexibility in mounting locations.

Model RTBC-EP is a modified version of the RTBC which utilizes a sealed switch. Since this switch has no arcing contacts it can be used in Division 2 Hazardous Areas.

Exterior Construction





- **A** Strategically placed cable entries allow maximum flexibility for insulation (Heating cable cut away for clarity)
- **B** Stainless steel tiedown support provides positive attachment to pipes
- **C** Heavy duty support legs give stable mounting and provide conduit clearance for applications with up to three inches of insulation
- **D** Opening for 3/4-inch (20 mm) conduit hub
- **E** Stainless steel sheath temperature sensor
- **F** Oblique sided box and cover allow easy access for wiring

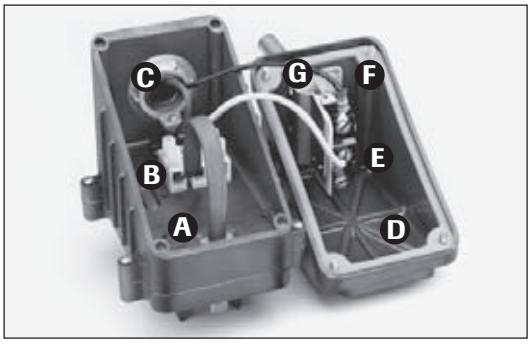
- **A** Strategically placed cable entries allow maximum flexibility for insulation (Heating cable cut away for clarity)
- **B** Stainless steel tiedown support provides positive attachment to pipes
- **C** Heavy duty support legs give stable mounting and provide conduit clearance for applications with up to three inches of insulation
- **D** Opening for 3/4-inch (20 mm) conduit hub
- **E** Oblique sided box and cover allow easy access for wiring
- **F** Stainless steel capillary (3 feet/1 meter long)
- **G** Stainless steel sensing bulb

DL – Single Point On/Off Temperature Controls

Interior Construction

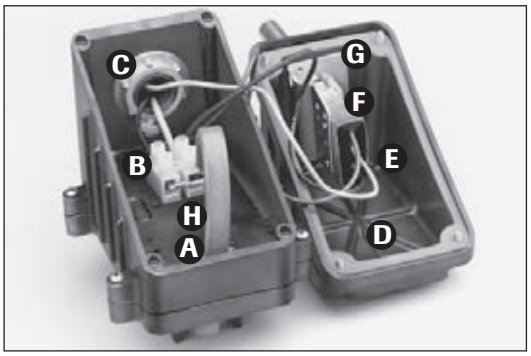
Each model consists of a NEMA 4X corrosion resistant wiring and control enclosure with terminal block, enclosure support, on/off thermostatic control and sensor. The enclosure has a 3/4" opening to accept a conduit hub (CCH-2 or equivalent). A pipe strap (PS Series pipe straps or equivalent) is required to mount the enclosure on a pipe. A mounting plate (MP Series) is required to mount the enclosure to a flat surface.

RTAS



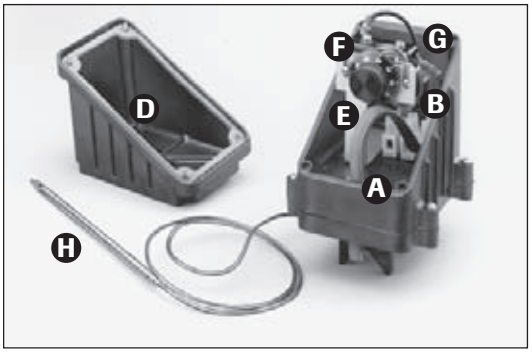
- Ⓐ Cable grommet provides water resistant seal between base and box
- Ⓑ Three position terminal block for easy wiring
- Ⓒ Power wiring entry. Conduit hub not included
- Ⓓ Gasket provides water resistant seal between box and lid. It is affixed to the lid and captures the mounting hardware
- Ⓔ Thermostat switch
- Ⓕ Set point adjustment knob
- Ⓖ Set point indicator

RTAS-EP



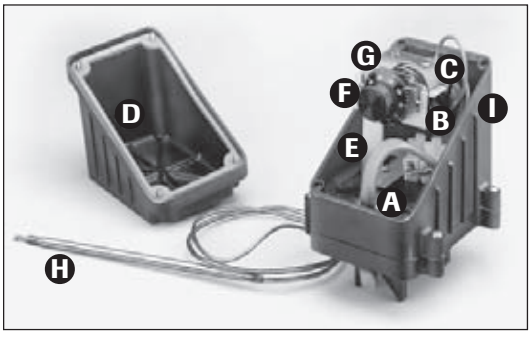
- Ⓐ Cable grommet provides water resistant seal between base and box
- Ⓑ Three position terminal block for easy wiring
- Ⓒ Power wiring entry. Conduit hub not included
- Ⓓ Gasket provides water resistant seal between box and lid. It is affixed to the lid and captures the mounting hardware
- Ⓔ Hermetically sealed thermostat switch
- Ⓕ Set point adjustment knob
- Ⓖ Set point indicator
- Ⓗ Ground wire connector

RTBC



- Ⓐ Cable grommet provides water resistant seal between base and box
- Ⓑ Three position terminal block for easy wiring
- Ⓒ Power wiring entry. Conduit hub not included (Not shown in picture)
- Ⓓ Gasket provides water resistant seal between box and lid. It is affixed to the lid and captures the mounting hardware
- Ⓔ Thermostat mounting bracket
- Ⓕ Set point adjustment knob
- Ⓖ Thermostat switch
- Ⓗ Stainless steel sensing bulb

RTBC-EP



- Ⓐ Cable grommet provides water resistant seal between base and box
- Ⓑ Three position terminal block for easy wiring
- Ⓒ Power wiring entry. Conduit hub not included (Not shown in picture)
- Ⓓ Gasket provides water resistant seal between box and lid. It is affixed to the lid and captures the mounting hardware
- Ⓔ Thermostat mounting bracket
- Ⓕ Set point adjustment knob
- Ⓖ Hermetically sealed thermostat switch
- Ⓗ Stainless steel sensing bulb
- Ⓘ Ground wire connection

*UL, FM, CSA not available

Single Point On/Off Temperature Controls — DL

Enclosure Specifications for RTAS & RTBC

Model Number	PCN	Switch Rating (Volts/Amps)	Max. Continuous Exposure Temperature °F	Max. Continuous Exposure Temperature °C	Max. Intermittent Exposure Temperature °F	Max. Intermittent Exposure Temperature °C	Wt. (Lbs.)
RTBC	389600	22A @ 120 - 480	400	200	500	260	2
RTBC-EP	389618	11A @ 120 - 250	400	200	500	260	2
RTAS	389589	22A @ 120 - 480	400	200	500	260	2
RTAS-EP	389579	11A @ 120 - 250	400	200	500	260	2

Cable grommets provide a water-tight seal between base, box and cable. Use GRSR with all self-regulating cables. Use GRCW with all constant wattage cables. One of each grommet is included in each kit. See table below to order spare grommets.

Spare Grommets

Model	Description	PCN
GRS	RTD/Capillary	385000
GRO	Blank	385019
GRSR	Self-Regulating Type	389714
GRCW	Constant Wattage Type	389722

Thermostat Specifications for All RTAS & RTBC

Temperature Set Point Range ..... 0 to 400°F (-18 to 200°C) for RTBC Only;
0 to 225°F (-18 to 107°C) for RTAS

Microswitch® Rating ..... 22 Amps SPDT for RTAS and RTBC; 11 Amps at 250V for EP models

Scale Division ..... 10°F (5.6°C)

Maximum Sensor Exposure Temp. ..... 450°F (230°C)

Sensor Dimensions ..... 1/4" OD x 7-1/4" L Bulb, 3' Capillary - RTBC
9/16" OD x 4" L Stainless Steel Probe - RTAS

Operating Ambient Temp. Range ..... -40 to 160°F (-40 to 71°C)

Factory Preset and Calibrated ..... 200°F (93°C) for RTBC
40°F for RTAS