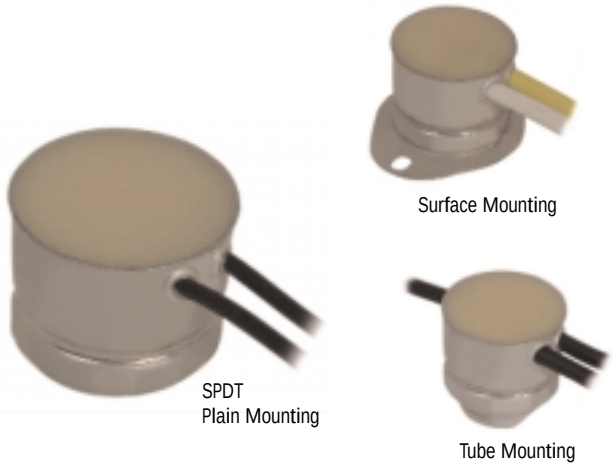
Product Bulletin

KLIXON

20420 & 20425 Series

Fixed Temperature Thermostats Snap-Action Automatic Reset



- Low cost sealed thermostat
- Resists shock and vibration regardless of mounting position – Klixon® snap-action thermal disc assures positive make/break action.
- Sealed enclosure – sealed against dirt and moisture
- Easy to mount – available with bottom, thru-wall or tube-mounting. relative small size is ideal where space is limited.
- High capacity – up to 25 amp, 120 and 240 VAC resistive. UL recognized for 100,000 cycles. (SA995)
- Tamperproof – temperatures are factory set.
- Automatic reset – recycles automatically.

Klixon 20420 and 20425 thermostats are fixed-setting, low cost, snap-action temperature controls designed with sealed construction especially for refrigeration, air conditioning and heat pump applications. They also may be used for other purposes within their temperature range of operation where sealed construction is desirable.

The 20420 and 20425 are available in single-pole, single-throw (SPST) or single-pole, double-throw (SPDT) automatic reset construction. All operating parts and lead connections are contained within a metal cup which is filled with an epoxy resin compound to completely seal out moisture, dust, or other contamination.

Temperature actuation is achieved by the Klixon snap-action bi-metallic disc. The inherent snap-action of the disc provides clean, heavy duty switching. The disc is located at the bottom of the cup where temperature change at the mounting point is quickly transmitted to give a high degree of thermal sensitivity.

A variety of mountings are available, as shown on page 2, to provide a dependable and economical means of assembly.

Temperature Settings, Tolerances and Nominal Differentials

Range of temperature settings, tolerances and nominal differentials shown below are standard. (Selection of larger differentials and wider tolerances offer the lowest unit price.) If settings and differentials other than those shown are desired, send details for special consideration.

Range of Temperature Settings	Mfg.* Tolerances		Minimum Mean Temperature Differential
	Open	Close	
(–10) 81	80 221	±6 ±5	15°F 15°F
(–10) 81	80 221	±6 ±5	20°F 20°F
(–10) 81	80 221	±6 ±5	30°F 30°F
(–10) 81	80 221	±6 ±5	40°F 40°F

*Customer's checking tolerances should allow for differences in test equipment.

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Ambient Temperature Exposure (Maximum)

20420 ..... –65°F to 167°F
20425 ..... 0°F to 221°F
20427 ..... 0°F to 221°F
20428 ..... 0°F to 221°F

Contact Description

Klixon 204 Series thermostats are supplied in two contact structures, identified by the numbers following the basic series number.

The letter"F" added to the series number indicates that the thermostat is supplied as a fan switch (closes on temperature rise). The letter "L" indicates that the thermostat is supplied as a controlling and high limit control (opens on temperature rise).

All thermostats with "F" and "L" designations are supplied with single-pole, single-throw switching action while "D" indicates single-pole, double-throw switching action.

Leads

Leads are attached to the terminals of the basic unit prior to sealing. Leads are #14, #16 or #18 gauge wire size, and are provided with ends stripped. Quick connect terminals, eyelets, or other terminal configurations are available at additional cost.

Length of lead as required by customer is measured from center of the thermostat to either:

1. end of stripped wire
2. center of eyelet
3. center of right angle Quick Connect
4. end of straight Quick Connect

Neoprene insulation is available in black. Polyvinyl Chloride (PVC) insulation is available in a variety of colors as required.

Wire Size (AWG)	20420	20420
#14 5/16th wall	Neoprene covered, UL approved appliance wire, 75°C	105°C PVC, UL approved appliance wire
#16 1/16th wall	Same as above Black only	Same as above
#16 1/32nd wall		Same as above
#18 1/16th wall		Same as above 7 amps max.
#18 1/32nd wall		Same as above 7 amps max.

Electrical Clearances

1/4" through air to ground
3/8" oversurface to ground

Electrical Ratings – UL and CSA Recognized

20420 & 20425

Terminals #1 and #3 – 100,000 cycles

Motor Rating	13 amps, full load, 120 VAC 60 amps, locked rotor, 120 VAC 10 amps, full load, 240 VAC 45 amps, locked rotor, 240 VAC
Ampere Rating	25 amps, non-inductive, 120 and 240 VAC 15 amps, non-inductive, 277 VAC

Terminal #1 and #2 – 100,000 cycles

Motor Rating	5.8 amps, full load, 120 VAC 34.8 amps, locked rotor, 120 VAC 2.9 amps, full load, 240 VAC 17.4 amps, locked rotor, 240 VAC
Ampere Rating	10 amps, non-inductive, 120 VAC 5 amps, non-inductive, 240 VAC

Both contacts Pilot Duty
125 volt-amperes, 120 & 240 VAC

20420 & 20425

Terminals #1 and #3 – 30,000 cycles

Motor Rating	16 amps, full load, 120 and 240 VAC 65 amps, locked rotor, 120 and 240 VAC
Ampere Rating	25 amps, non-inductive, 120 and 240 VAC

Terminal #1 and #2 – 30,000 cycles

Ampere Rating	5 amps, non-inductive, 120 VAC 2.5 amps, non-inductive, 240 VAC

20420 & 20425

Terminals #1 and #3 –6,000 cycles

Motor Rating	16 amps, full load, 120 and 240 VAC 65 amps, locked rotor, 120 and 240 VAC 10 amps, full load, 277 VAC 45 amps, locked rotor, 277 VAC
Ampere Rating	16 amps, non-inductive, 120 and 240 VAC

Terminal #1 and #2 – 6,000 cycles

Motor Rating	10 amps, full load, 277 VAC 45 amps, locked rotor, 277 VAC
Ampere Rating	15 amps, non-inductive, 120 and 240 VAC
Pilot Duty	125 volt-amperes, 120 and 240 VAC

20427

Terminals #1 and #3 – 100,000 cycles

Millivolt Circuits	1 amp, 1 VDC

20428

Terminals #1 and #3 – 6,000 cycles

Motor Rating	23 amps, full load, 120 and 240 VAC 80 amps, locked rotor, 120 and 240 VAC
Ampere Rating	25 amps, non-inductive, 120 and 240 VAC

UL File No. SA995
Guide No. SDFY2

CSA File No. LR21794
Guide No. 400-E-0

Engineering Services

A TI field sales engineer, who knows your temperature control problems and how our products solve them, is located close at hand. Use his services to eliminate needless engineering cost and give your products a competitive edge.

How To Order Samples

When requesting samples, faster service is possible when your application is described in detail. A description of the duty cycles of the thermostat should be included.

for Please Specify:

1. Load requirements (inductive or resistive).
2. Temperature settings (opening and closing).
3. Maximum tolerances allowable on temperature settings.
4. Lead wire specifications (length, wire size, type termination).
5. Type mounting flange.
6. Estimated yearly usage.

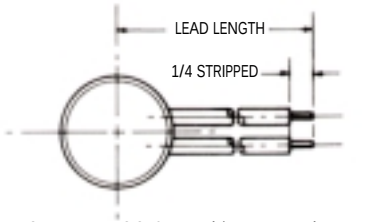
Other conditions which affect the thermostat should be described:

1. Maximum and minimum temperature exposure.
2. Location with respect to heat source
3. Temperature transfer medium (air, metal surface, etc.).
4. Possible contamination sources (lint, chemical fumes, etc.).

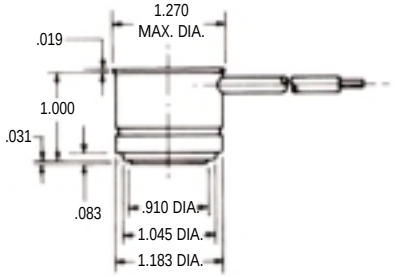
When ordering thermocouple samples, specify whether iron constantan or copper constantan couples should be supplied, and state lead length desired. Standard wire size: 30 Gauge.

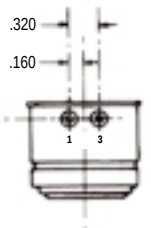
For further information write or call:
Texas Instruments Incorporated
Commercial Sensors & Controls
Thermal Controls Marketing
34 Forest Street, MS 23-10
Attleboro, MA 02703-0964
Phone: (508) 236-3192
(508) 236-1894
Fax: (508) 236-2349
or visit our website @ www.tisensors.com

Plain Mounting

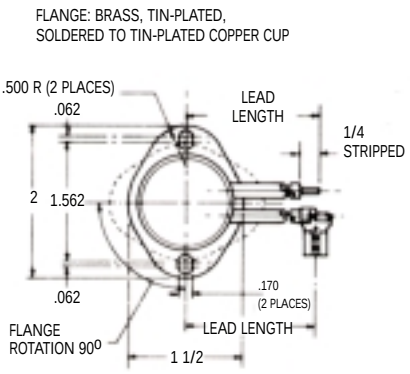


STRIPPED ENDS SHOWN, quick connect, eyelets and other terminal configurations available

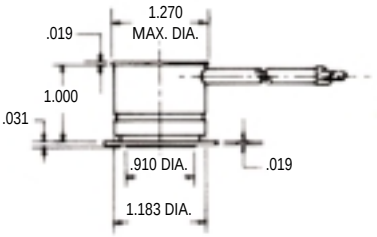


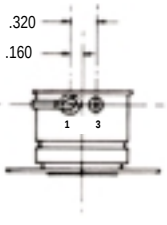


Surface Mounting Oval Flange

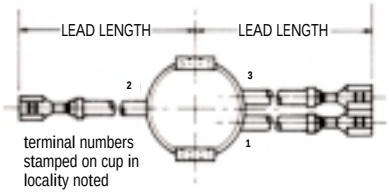


STRIPPED ENDS, quick connect, eyelets and other terminal configurations available

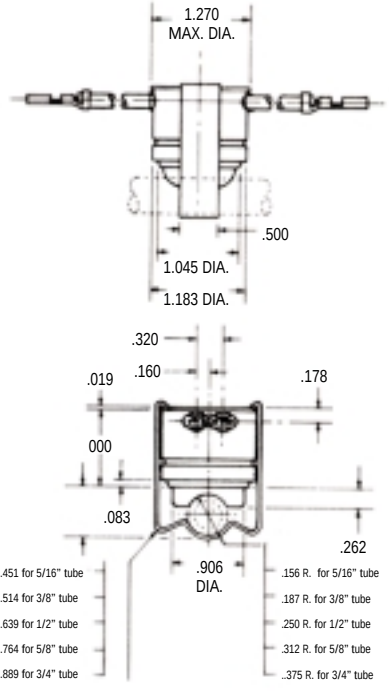




Mounting Cup for 5/16", 3/8", 1/2" 5/8" and 3/4" Dia. Tubes



QUICK CONNECTS SHOWN stripped ends, eyelets and other terminal configurations available



SPRING CLIP OPTIONAL. NOT SUPPLIED UNLESS REQUESTED
no. 50097-1 must be specified when 1/2" spring clip is ordered
no. 50097-2 must be specified when 3/8" spring clip is ordered
no. 50097-3 must be specifed when 5/8" spring clip is ordered
no. 50097-4 must be specified when 5/16" spring clip is ordered
no. 50097-5 must be specified when 3/4" spring clip is ordered

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