

SERIES 2541

“ONE SHOT” 3/4” THERMOSTATS

Typical Applications:

- Office Automation Products
- HVAC Equipment



SENASYS 2541 series of "One Shot" thermostats are specifically designed as high limit devices for applications where automatically resettable thermostats are not desirable. These reliable devices are especially well-suited for application in small and major appliances and industrial and high technology products.

To insure that a safe combination of thermostat and application is achieved, the purchaser must determine product suitability for their individual requirements.

RATINGS

MODEL	CYCLES	120VAC	240 VAC	277 VAC	480VAC	48 VDC
2541	1		40		13	12

Contacts are available for millivolt and milliamp applications.

Consult SENASYS for additional ratings.

* Will reset below -31°F, -35°C

**Amp Resistive

UL and CSA Listings

UL and CSA Listings are for use in equipment where the acceptability of the combination of the thermostat and equipment is determined by Underwriter's Laboratories, Inc. and/or Canadian Standards Association

UL File E36103, MH8267	CSA File LR43279
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Key Features and Benefits

- High environmental exposure temperature of 0°F to 350°F
- UL recognized, CSA certified
- Single-pole, single-throw
- High capacity up to 40 Amps resistive
- Factory calibrated to your specification

Standard Temperature Characteristics

Temperature Set Point Ranges	Tolerance Allowance ^o ± at temperature set points	Price Group*
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	±°F	±°C	
125 to 200°F (52 to 93°C)	8	5	I
201 to 250°F (94 to 121°C)	10	6	I
251 to 300°F (122 to 149°C)	12	7	I
301 to 350°F (150 to 177°C)	15	8	I

Thermostat Operation

When contacts are closed, current passes from terminal to terminal through the stationary contact to the movable contact which is actuated by the snap movement of the bimetal disc. The disc, which is fully insulated from the switch chamber by the pin and disc retainer, is affected by surface or ambient temperature changes. Upon reaching the opening temperature, the disc snaps from a convex to a concave shape, depressing the pin which opens the contacts. The open circuit allows the temperature to drop and causes the disc to snap to its original position, closing the contacts. A thermostat which closes on a rise in temperature operates in a similar manner, but in reverse action.

Location and Selection of Components

A thermostat can be used to control temperature, to warn in advance of temperatures beyond desired limits, or to shut down an entire system. Response, accuracy, sensitivity, and the ability to sense the thermal parameter in a system depends on the proper selection of a thermostat and its application with respect to location, heat source, electrical load, transfer media, thermal lag, and the design life of the system. Samples of working thermostats or special thermostats with thermocouples installed are available to help you determine the proper combination of location and temperature set points.

Application Parameters

Proper choice of operating temperatures for a thermostat generally depends on many application parameters. The following can have a significant effect on the final operating point of the application:

1. Rate of Temperature Rise
2. Location of the Thermostat
3. Electrical Load
4. Mass of the Thermal System
5. Heat Transfer Medium (air, metal surface, etc.)

Because of these variables, we recommend

that initial testing be performed with thermocouple samples to minimize trial and error when choosing final temperatures and tolerances. When requesting thermocouple samples please specify Iron or Copper Constantan and Lead Length.

SENASYS Sensors Part Number

A complete SENASYS part number consists of 3 parts. (Example: ⁽¹⁾2511 ⁽²⁾F002-⁽³⁾2015) The first group specifies the series. The second group identifies the terminal and bracket combination desired and is generally unique to that series only. The last group is sequentially assigned by SENASYS Sensors' Application Engineering Dept., and defines the temperature parameters, etc., unique to that device.

Testing Procedures

Temperature testing is performed using either liquid or air as a test medium. To allow for variation in temperature checking methods, a 1°C allowance should be considered. This allowance is for correlation or differences between test instruments. Manufacturing specifications and production testing are to specified requirements and do not make use of the correlation variance.

Creep testing is the verification of an instantaneous change of state of the electrical contacts.

The Dielectric withstand voltage test (Hipot) is performed at a higher voltage for a short duration than the rated voltage of the thermostat. This helps assure satisfactory performance at rated voltage and also the ability of the unit to withstand momentary overpotentials. This test also serves to determine whether insulating materials and spacing are adequate.

Samples and Ordering

To order samples please refer to the form on the inside back cover. If you need assistance call us at (888) 736-2797, or e-mail us at support@senasys.com.

Definitions

Automatic Reset: A type of thermostat that will reset itself at a specific temperature; (i.e. a thermostat opens at 150°F and closes or resets itself at 120°F)

Bimetal: Two dissimilar metals bonded together to form the disc that actuates the thermostat; upon reaching a specified temperature, the disc snaps over the center.

Close On Rise: (COR) refers to operation of the contacts. When the temperature rises to its set point the contacts close or make contact and complete the circuit.

Dielectric Strength: Is the deliberate application of a pre-determined overvoltage to a thermostat for specified time.

FLA: (Full Load Amps) current taken from line by motor when motor is yielding rated hp at rated voltage and frequency.

Manual Reset: A bimetal thermostat with a reset button that must be pressed to reset the device.

Max. Differential: The maximum allowable difference between the actual opening and the actual closing temperatures.

Mean Differential: The difference between the upper and lower nominal set points without regard to tolerances.

Min. Differential: (Sometimes called “Deadband”) The minimum allowable difference actual opening temperature and the actual closing temperature.

Open On Rise: (OOR) refers to the operation of contacts—when the temperature rises to its set point, the contacts open terminating the circuit.

Phenolic: A plastic used as the insulating body of the thermostat.

Set Point: The nominal temperature at which the thermostat is to open or close.

SPST: (Single Pole/Single Throw) an electrical switch with one set of terminals that terminate or actuate a circuit.

Tolerance: The allowable range above and below the set point temperature.

Quality Control and Application

The entire production process from preassembly to shipping of the final product is supervised by a staff of quality control personnel. Specifications and performance characteristics of SENASYS, Inc. stated herein or in any other SENASYS communication are based upon various testing and quality control procedures established by SENASYS. Information regarding such procedures will be provided upon request. SENASYS reserves the right to alter specifications contained herein as it may deem necessary. Purchasers are advised to test and engineer their products and the application of SENASYS's products, particularly where the application is one wherein a malfunction could result in damage or injury. Whenever SENASYS provides analysis or information to assist a purchaser in the application of SENASYS's products, such analysis or information shall not affect any of the foregoing nor shall it constitute a warranty of any kind with respect to said application. Sales by SENASYS are subject to standard terms and conditions set forth in its sales documents. Electrical rating and performance characteristics have been established after testing and review of standard operating conditions. The specifications outlined in the bulletin suggest the performance characteristics when the units are subject to these standard conditions. To ensure that our laboratory test conditions duplicate the performance requirements for the application, all devices should be tested by the purchaser for each application. Terms of all sales be as provided in SENASYS, Inc. standard terms and conditions of sale, including its limited warranty provisions.

REQUEST FOR SAMPLES OR QUOTATION

DO NOT DETACH!
Photocopy & Fax
to SENASYS
(419) 818-0897

For information on other
SENASYS products

CMC Multi-Light
Control Switches

P-Series Controls

SENASYS

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Altoona, WI 54720
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Toll Free: 1-888-736-2797
Fax: (419) 818-0897

www.senasys.com
support@senasys.com

Company _____ Telephone _____

Name _____

Street _____

City _____ State/Zip _____

Describe the Application: _____

New Product **Existing Product**

Thermostat Function: High Limit Control Manual Reset

Ambient Conditions:

Exposure Temperature Maximum _____ °F, Duration _____

Minimum _____ °F, Duration _____

Temperature Rate of Rise _____ °F per minute _____

Environmental Seal Hermetic Dust Proof Unsealed

Electrical Load:

Voltage _____ AC DC

Resistive _____ AMPS Inductive _____ F.L.A. _____ L.R.A. _____

Dielectric _____ Megohm _____

Life Cycles at Specified Load _____ Cycles

Thermostat Specification:

Contact Open _____ °F ± _____ °F Tolerance

Contacts Close _____ °F ± _____ °F Tolerance (automatic reset only)

Contacts Close Manually (_____) Resettable By _____ °F

Part Number: SENASYS # _____ Customer# _____

Mounting Bracket # _____ Terminal Type _____

Exposed Bimetal Enclosed Bimetal

Sample Quantity:

_____ units Delivery Requested _____

Production:

Estimated Usage _____ Annually, Start Date _____

One Time Order Quantity _____

Agency Approvals:

UL CSA Other _____

Quotation Requested:

Yes No Quantity _____

For special configurations, please provide a sketch.