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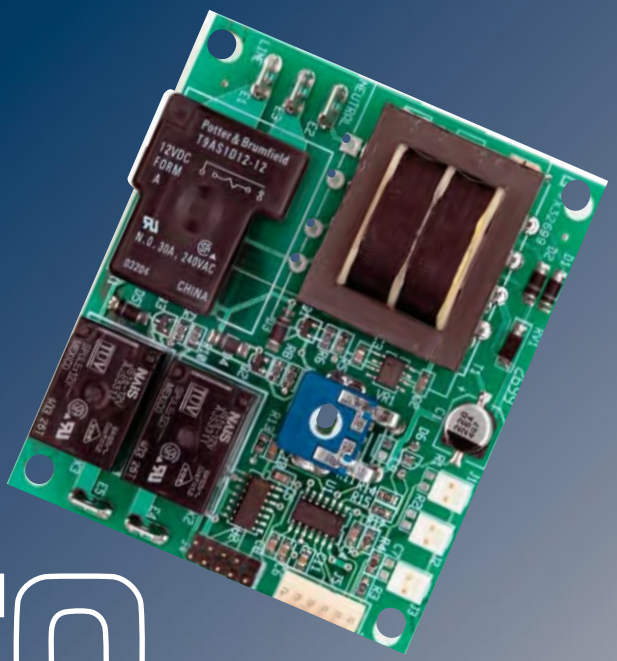
—Representing quality products since 1941

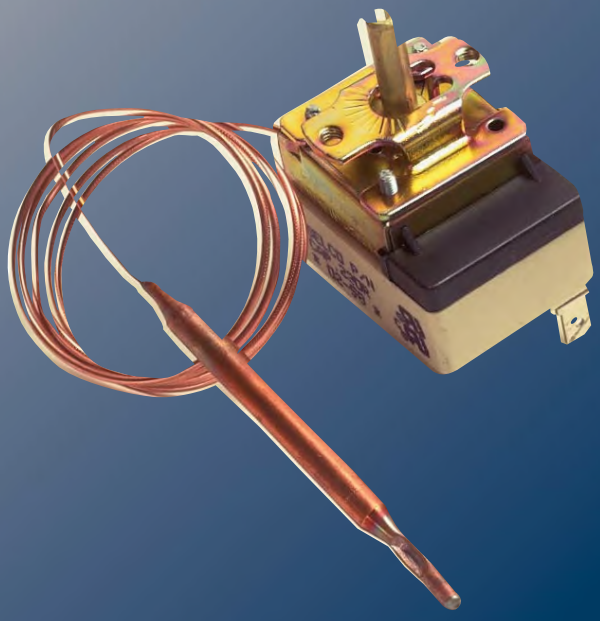


selco

SELCO PRODUCTS COMPANY

THERMOSTATS • ELECTRONIC CONTROLS

ISO 9001/AS 9100 Certified Quality System



Our Service Makes The Difference

1/2" Disc Thermostats • 1/2" Disc Hermetically Sealed Thermostats • 3/4" Disc Thermostats • Encapsulated Thermostats • Thermal Protectors • Printed Circuit Board Thermostats • One-Shot Thermal Cut-offs • Probe Thermostats • Cold Capillary Thermostats • Adjustable Thermostats • Hot Bulb & Capillary Thermostats • Value Added Services • NTC Thermistors • PPTC Thermistors • CdS Photocells • Electronic Controls • Digital Panel Meters • Control Knobs

www.Gordonhatch.com Email: info@gordonhatch.com Toll free: ph 800-925-4328 Local: ph 262-253-4800

Founded in 1958 by Bill Wilkinson, Selco Products' corporate headquarters is in Anaheim, California. Our sales force consists of direct and manufacture representatives throughout North America and Mexico. Every member of our customer support team is dedicated to - providing you with knowledgeable assistance, timely response to special requirements, and prompt delivery of your order.

Selco has manufacturing facilities in Anaheim, San Diego, China, Japan, Italy, and Brazil. While we manufacture our own line of electronic controls, we have exclusive agreements with select off-shore manufacturers to supply us with high quality electro-mechanical thermal components. Selco handles all marketing and distribution of their products in North America and we also assist with engineering, quality assurance, and UL approvals. This allows us to offer a very broad range of products at very competitive prices.

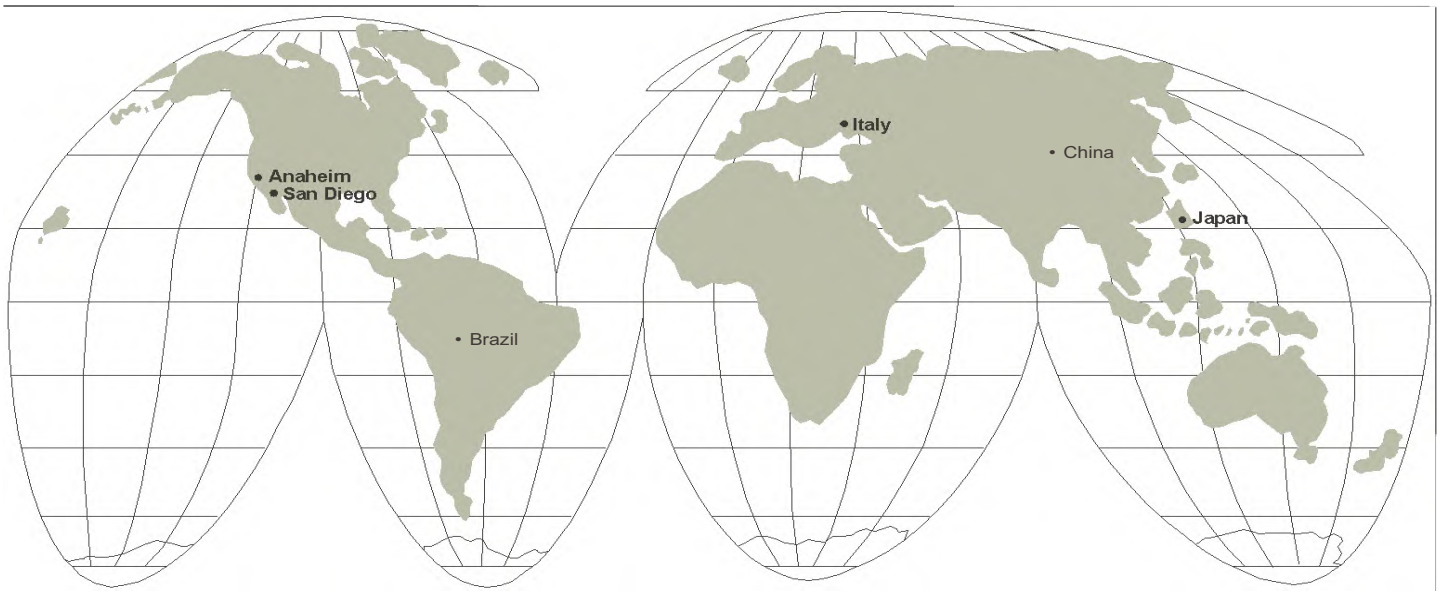
A full range of product lines are offered by Selco including thermal products, thermistors, control knobs, electronic controls, and digital panel meters. The thermal products line is comprised of automatic/manual reset bulb and capillary thermostats, cold capillary controls, hermetically sealed thermostats, high temperature thermostats, 1/2" and 3/4" disc thermostats, thermal cut-offs, thermal protectors, NTC (negative temperature coefficient) and PPTC (polymer positive temperature coefficient) thermistors. Control knobs include collet, push-on, slider, and accessories. Selco's line of electronic controls consist of digital temperature and time controllers, configurable controllers, digital timer modules, and relays. DC and AC voltmeters and ammeters, process monitors, setpoint comparators, thermometers, counters, tachometers, are offered in the digital panel meter line.

Selco services both OEM and end-user companies in the following industries:

- **HVAC**
- **Medical**
- **Appliances**
- **Electronics**
- **Food Service**
- **Process Controls**
- **Professional Audio**
- **Telecommunications**
- **Industrial Instrumentation**

Selco Strengths

- **JIT program**
- **FREE samples**
- **On-time delivery**
- **Kanban program**
- **One-year warranty**
- **Engineering support**
- **Value Added services**
- **Lead time - six weeks (approx.)**
- **Cost reduction over present source**
- **Same day shipping from Anaheim, CA**
- **Special packaging/labeling/bar coding**
- **Complete thermal component source**
- **Prompt, friendly, and courteous customer service**



ISO 9001/AS 9100 Certified Quality System

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GORDON HATCH CO. INC.
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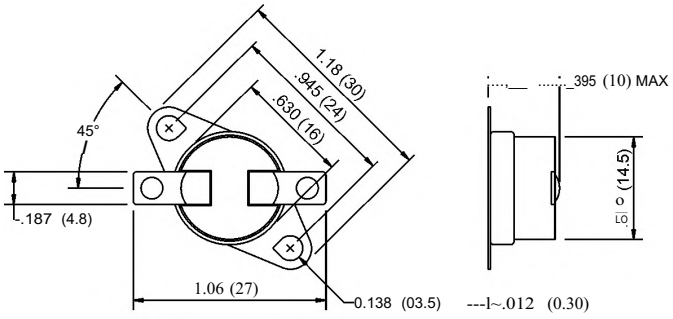
1/2” Disc Thermostats - Automatic Reset

CA/OA (602S) Series, Gold Contacts (602K)



SPECIFICATIONS	
Electrical ratings - Type S	125VAC, 15 Amps, Resistive, 100,000 Cycles 250VAC, 10 Amps, Resistive, 100,000 Cycles
Inductive load ratings	120VAC, 5.8FLA, 34.8LRA, 6,000 Cycles 240VAC, 2.9FLA, 17.4LRA, 6,000 Cycles
Electrical ratings - Type K	30VDC, 1 Amp, Resistive, 100,000 Cycles 120VAC, 125VA (pilot duty), 1 Amp
Temperature range *UL approved models*	50ºF to 302ºF (10ºC to 150ºC)
Non-UL approved models	302ºF to 320ºF (575ºC to 608ºC)
Differential	15ºF to 100ºF (8ºC to 56ºC)
Environmental temperature	32ºF to 350ºF (0ºC to 177ºC)
Insulation resistance	100M Ω or more (with a 500VDC megger)
Circuit resistance	50m Ω or less (initial value)
Dielectric strength	1,500VAC/1 minute
Approvals	UL Recognized File No. E145478(S), XAPX2 CSA File No. LR63201 VDE File No. 69046 Demko File No. DK-451, CE RoHS Compliant

This line of highly reliable switches utilize a temperature sensitive disc, electrically isolated from the switch. Contacts will open or close on rise when surface or ambient temperature increase to the snap point of the calibrated bimetal disc. The entire switch is enclosed in a phenolic dust-free housing. The bimetal disc is retained by a metal heat-conducting end cap.

The CA and OA Series thermostats are used in a variety of applications. They are produced in an ISO 9000 certified factory to insure safe and reliable operation. All models are 100% factory inspected for temperature, continuity and function.

Value Added options available including over-mold and seal. For details regarding Value Added options, see page 51.

Models available from stock - subject to availability • CA - Close On-Rise (normally open) • OA - Open On-Rise (normally closed)

Close/Open On-Rise	Model Number	Open ºF	Close ºF	Mounting	Terminals	Orientation from Mounting Holes
Close	CA-50	32 ± 10	50 ± 7	surface	solder tabs	45º
Close	CA-60	40 ± 9	60 ± 7	surface	solder tabs	45º
Close	CA-60-QCV	40 ± 10	60 ± 7	surface	.250 quick connects, vertical	90º
Close	CA-85	67 ± 9	85 ± 7	surface	solder tabs	45º
Close	CA-85-PCB	55 ± 10	85 ± 7	air	printed circuit board	●
Close	CA-85-QC	67 ± 10	85 ± 7	surface	.187 quick connects, horizontal	45º
Close	CA-100	70 ± 10	100 ± 7	surface	solder tabs	45º
Close	CA-104-ST-18	86 ± 10	104 ± 8	6-32 stud	.250 quick connects, vertical	●
Close	CA-107-QCV	90 ± 10	107 ± 7	surface	.187 quick connects, vertical	90º
Close	CA-110	80 ± 10	110 ± 7	surface	solder tabs	45º
Close	CA-110-PCB	80 ± 10	110 ± 7	air	printed circuit board	●
Close	CA-110-QC45	80 ± 10	110 ± 7	surface	.187 quick connects, horizontal	45º
Close	CA-115-QC	100 ± 10	115 ± 7	rotating bracket	.250 quick connects, horizontal	●
Close	CA-120	90 ± 10	120 ± 7	surface	solder tabs	45º
Close	CA-120-QC	90 ± 10	120 ±7	surface	.250 quick connects, horizontal	90º
Close	CA-120-QCH	90 ± 10	120 ± 7	surface	.187 quick connects, horizontal	45º
Close	CA-120-QCV	90 ± 7	120 ± 10	surface	.250 quick connects, vertical	90º
Close	CA-130-QC	110 ± 10	130 ± 7	surface	.250 quick connects, vertical	45º
Close	CA-130-QCH	100 ± 10	130 ± 7	surface	.250 quick connects, horizontal	90º
Close	CA-130-ST	112 ± 10	130 ± 7	8-32 stud	.250 quick connects, vertical	●
Close	CA-130-WOB	100 ± 10	130 ± 7	no bracket	solder tabs	45º
Close	CA-140	110 ± 10	140 ± 7	surface	solder tabs	45º
Close	CA-140-QC	110 ± 10	140 ± 7	surface	.250 quick connects, vertical	90º
Close	CA-140-QC18	122 ± 10	140 ± 7	rotating	.250 quick connects, vertical	●
Close	CA-150	120 ± 10	150 ± 7	surface	solder tabs	45º
Close	CA-160	130 ± 10	160 ± 7	surface	solder tabs	45º
Close	CA-160-QC	130 ± 10	160 ± 7	surface	.250 quick connects, horizontal	90º
Close	CA-160-QC15	145 ± 7	160 ± 10	surface	.250 quick connects, horizontal	90º
Close	CA-170	140 ± 10	170 ± 7	surface	solder tabs	45º

It is the customer’s sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

1/2” Disc Thermostats - Automatic Reset

CA/OA (602S) Series, Gold Contacts (602K)

Models available from stock - subject to availability • CA - Close On-Rise (normally open) • OA - Open On-Rise (normally closed)

Close/Open On-Rise	Model Number	Open ºF	Close ºF	Mounting	Terminals	Orientation from Mounting Holes
Close	CA-170-QC	140 ± 10	170 ± 7	surface	.250 quick connects, vertical	90º
Close	CA-170-WOB	140 ± 10	170 ± 7	no bracket	solder tabs	●
Close	CA-175-QC	145 ± 10	175 ± 7	surface	.250 quick connects, horizontal	90º
Close	CA-180	150 ± 10	180 ± 7	surface	solder tabs	45º
Close	CA-180-QCV	150 ± 10	180 ± 7	rotating	.250 quick connects, vertical	●
Close	CA-185-ST	145 ± 10	185 ± 7	6-32 stud	.250 quick connects	●
Close	CA-190	169 ± 10	190 ± 7	surface	solder tabs	45º
Close	CA-190-QC	172 ± 10	190 ± 7	surface	.250 quick connects, vertical	90º
Close	CA-200	170 ± 10	200 ± 7	surface	solder tabs	45º
Close	CA-205	175 ± 10	205 ± 7	surface	solder tabs	45º
Close	CA-205-ST	175 ± 10	205 ± 7	6-32 stud	.250 quick connects @ 30º	●
Close	CA-210-QC	180 ± 10	210 ± 7	surface	.187 quick connects, vertical	90º
Close	CA-225	195 ± 10	225 ± 7	surface	solder tabs	45º
Close	CA-230-QC	203 ± 7	230 ± 10	rotating bracket	.187 quick connects, horizontal	●
Close	CA-230-STG	185 ± 10	230 ± 7	6-32 stud	.187 quick connects, vertical	●
Close	CA-240	210 ± 10	240 ± 7	surface	solder tabs	45º
Close	CA-270	240 ± 10	270 ± 7	surface	solder tabs	45º
Close	CA-270-QCV	240 ± 7	270 ± 10	surface	.187 quick connects, vertical	45º
Close	CA-300	270 ± 10	300 ± 7	surface	solder tabs	45º
Open	OA-50	50 ± 5	32 ± 10	surface	solder tabs	45º
Open	OA-60	60 ± 5	40 ± 7	surface	solder tabs	45º
Open	OA-60-PCB	60 ± 5	40 ± 7	air	printed circuit board	●
Open	OA-60-QCR	60 ± 5	40 ± 10	rotating	.250 quick connects, vertical	●
Open	OA-60-QCV	60 ± 5	40 ± 10	surface	.250 quick connects, vertical	90º
Open	OA-60-WOB	60 ± 5	40 ± 9	no bracket	solder tabs	●
Open	OA-70	70 ± 5	50 ± 10	surface	solder tabs	45º
Open	OA-80	80 ± 5	50 ± 9	surface	solder tabs	45º
Open	OA-80-PCB	80 ± 5	50 ± 10	air	printed circuit board	●
Open	OA-80-QCV	80 ± 5	50 ± 9	surface	.250 quick connects, vertical	90º
Open	OA-85	85 ± 5	67 ± 9	surface	solder tabs	45º
Open	OA-95-QC	95 ± 5	77 ± 9	surface	.250 quick connects, horizontal	90º
Open	OA-100	100 ± 5	70 ± 10	surface	solder tabs	45º
Open	OA-100-QC	100 ± 5	85 ± 10	surface	.250 quick connects, horizontal	90º
Open	OA-110	110 ± 5	80 ± 10	surface	solder tabs	45º
Open	OA-110-QC	110 ± 5	80 ± 10	rotating bracket	.250 quick connects, horizontal	●
Open	OA-120	120 ± 5	90 ± 10	surface	solder tabs	45º
Open	OA-120-15-45	120 ± 5	105 ± 10	surface	solder tabs	45º
Open	OA-120-QC	120 ± 5	90 ± 10	surface	.250 quick connects, vertical	90º
Open	OA-120-QCH	120 ± 5	90 ± 10	surface	.250 quick connects, horizontal	45º
Open	OA-130	130 ± 5	100 ± 10	surface	solder tabs	45º
Open	OA-130-ST	130 ± 5	100 ± 10	10-32 stud	.250 quick connects, horizontal	●
Open	OA-140	140 ± 5	110 ± 10	surface	solder tabs	45º
Open	OA-140-QCV	140 ± 5	110 ± 10	surface	.250 quick connects, vertical	90º
Open	OA-150	150 ± 5	120 ± 10	surface	solder tabs	45º
Open	OA-150-PCB	150 ± 5	120 ± 10	air	printed circuit board	90º
Open	OA-150-QCC	150 ± 5	120 ± 10	surface	.250 quick connects, vertical	●
Open	OA-158-ST	158 ± 5	118 ± 10	6-32 stud	.250 quick connects	●
Open	OA-160	160 ± 5	130 ± 10	surface	solder tabs	45º
Open	OA-160-QC20	160 ± 5	140 ± 10	surface	.250 quick connects, horizontal	90º
Open	OA-160-QCH	160 ± 5	130 ± 10	surface	.187 quick connects, horizontal	45º
Open	OA-160-QCV20	160 ± 5	140 ± 10	surface	.250 quick connects, vertical	90º
Open	OA-165-145	165 ± 5	145 ± 9	surface	.250 quick connects, vertical	90º
Open	OA-170	170 ± 5	140 ± 10	surface	solder tabs	45º
Open	OA-170-PCB	170 ± 5	140 ± 10	air	printed circuit board	●
Open	OA-170-WOB	170 ± 5	140 ± 10	no bracket	.187 quick connects, horizontal	●
Open	OA-175	175 ± 5	157 ± 10	surface	solder tabs	45º
Open	OA-175-QC	175 ± 5	145 ± 10	surface	.250 quick connects, vertical	45º
Open	OA-175-QCH	175 ± 5	157 ± 10	surface	.250 quick connects, horizontal	45º
Open	OA-175-S2	175 ± 6	145 ± 10	10-32 stud	.250 quick connects, horizontal	●
Open	OA-180	180 ± 5	150 ± 10	surface	solder tabs	45º

It is the customer’s sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

1/2” Disc Thermostats - Automatic Reset

CA/OA (602S) Series, Gold Contacts (602K)

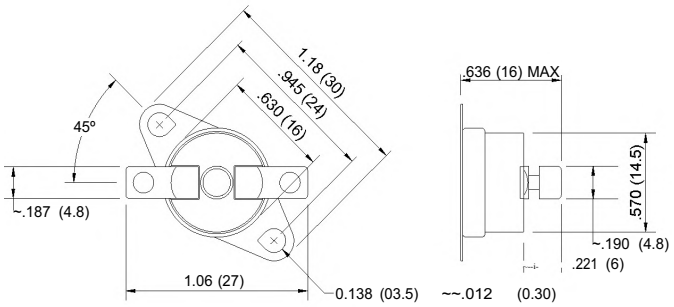
Models available from stock - subject to availability • CA - Close On-Rise (normally open) • OA - Open On-Rise (normally closed)

Close/Open On-Rise	Model Number	Open ºF	Close ºF	Mounting	Terminals	Orientation from Mounting Holes
Open	OA-180-QC	180 ± 5	150 ± 10	surface	.187 quick connects, horizontal	45º
Open	OA-180-QCV	180 ± 5	150 ± 10	surface	.250 quick connects, vertical	45º
Open	OA-180-QCVR	180 ± 5	150 ± 10	rotating bracket	.250 quick connects, vertical	●
Open	OA-185-QC18	185 ± 10	167 ± 10	rotating bracket	.250 quick connects, vertical	●
Open	OA-185-QCP	185 ± 5	154 ± 10	surface	.250 quick connects, vertical	90º
Open	OA-185-ST10	185 ± 5	131 ± 10	10-32 stud	.250 quick connects, horizontal	●
Open	OA-190	190 ± 5	160 ± 10	surface	solder	45º
Open	OA-190-QC	190 ± 7	172 ± 10	surface	.250 quick connects, vertical	45º
Open	OA-194-QC	194 ± 5	164 ± 10	surface	.187 quick connects, vertical	45º
Open	OA-194-QC18	194 ± 5	176 ± 10	surface	.250 quick connects, horizontal	90º
Open	OA-194-QCC	194 ± 5	153 ± 10	surface	.250 quick connects, vertical	90º
Open	OA-200	200 ± 5	170 ± 10	surface	solder	45º
Open	OA-200-QC	200 ± 5	181 ± 10	surface	.250 quick connects, vertical	90º
Open	OA-200-QCV	200 ± 5	170 ± 10	surface	.250 quick connects, vertical	45º
Open	OA-200-QCV-90	200 ± 5	170 ± 10	surface	.250 quick connects, vertical	90º
Open	OA-200-ST	200 ± 5	170 ± 8	10-32 stud	.250 quick connects	●
Open	OA-203-QCP	203 ± 5	163 ± 10	surface	.250 quick connects, vertical	90º
Open	OA-203-QCV	203 ± 5	167 ± 10	surface	.250 quick connects, vertical	90º
Open	OA-203-ST	203 ± 5	163 ± 10	6-32 stud	.250 quick connects	●
Open	OA-210	210 ± 5	180 ± 10	surface	solder	45º
Open	OA-210-QC	210 ± 5	180 ± 10	surface	.187 quick connects, horizontal	45º
Open	OA-210-QCR	210 ± 5	195 ± 10	rotating bracket	.250 quick connects, horizontal	●
Open	OA-210-QCV	210 ± 5	180 ± 10	surface	.250 quick connects, vertical	45º
Open	OA-212-QCP	212 ± 5	167 ± 10	surface	.250 quick connects, vertical	90º
Open	OA-220	220 ± 5	190 ± 10	surface	solder	45º
Open	OA-220-PCB	220 ± 5	190 ± 10	air	printed circuit board	●
Open	OA-220-QC	220 ± 5	190 ± 10	surface	.250 quick connects, horizontal	45º
Open	OA-225-205	225 ± 5	205 ± 10	surface	.250 quick connects, vertical	90º
Open	OA-230	230 ± 5	200 ± 10	surface	solder	45º
Open	OA-230-QCV	230 ± 7	200 ± 10	surface	.250 quick connects, vertical	90º
Open	OA-239-ST	239 ± 7	189 ± 10	6-32 stud	.250 quick connects	●
Open	OA-240-QCV	240 ± 7	200 ± 10	surface	.250 quick connects, vertical	90º
Open	OA-250	250 ± 7	220 ± 10	surface	solder	45º
Open	OA-250-PCB	250 ± 5	220 ± 10	air	printed circuit board	●
Open	OA-250-QC	250 ± 5	220 ± 10	surface	.187 quick connects, horizontal	45º
Open	OA-250-QCA	250 ± 7	220 ± 10	surface	.250 quick connects, horizontal	45º
Open	OA-265-QCA	265 ± 7	235 ± 10	air	.250 quick connects, vertical	90º
Open	OA-270-90	270 ± 7	240 ± 10	surface	solder	90º
Open	OA-275-QCH	275 ± 7	245 ± 10	surface	.250 quick connects, horizontal	45º
Open	OA-280	280 ± 7	250 ± 10	surface	solder	45º
Open	OA-280-QC	280 ± 7	250 ± 10	surface	.250 quick connects, vertical	45º
Open	OA-300	300 ± 7	270 ± 10	surface	solder	45º
Open	OA-300-QC	300 ± 7	220 ± 14	rotating bracket	.250 quick connects, vertical	●
Open	OA-300-QCVR	300 ± 7	270 ± 10	rotating bracket	.250 quick connects, vertical	●

It is the customer’s sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

1/2” Disc Thermostats - Manual Reset

OM (603U-H) Series, Gold Contacts (603K)



SPECIFICATIONS	
Electrical ratings - Type U-H	125VAC, 15 Amps, Resistive, 6,000 Cycles 250VAC, 10 Amps, Resistive, 6,000 Cycles
Inductive load ratings	120VAC, 5.8FLA, 34.8LRA, 12 Amps, 6,000 Cycles 250VAC, 2.9FLA, 17.4LRA, 6,000 Cycles
Electrical ratings - Type K *(Type K not VDE approved)*	30VDC, 1 Amp, Resistive, 6,000 Cycles 120VAC, 125VA (pilot duty), 6,000 Cycles
Temperature range *UL approved models*	120ºF to 302ºF (50ºC to 150ºC)
Non-UL approved models	302ºF to 320ºF (150ºC to 160ºC)
Manual reset	30% below operating temperature
Automatic reset	-40ºF
Environmental temperature	32ºF to 350ºF (0ºC to 177ºC)
Insulation resistance	100M Ω or more (with a 500VDC megger)
Circuit resistance	50m Ω or less (initial value)
Dielectric strength	1,500VAC/1 minute
Approvals	UL Recognized File No. E145478(S), XAPX2 C-UL Recognized File No. E145478(S), XAPX8 CSA File No. LR63201 VDE File No. 135151 (Type U-H only) RoHS Compliant

APPLICATIONS

- Fireplaces
- Vacuum cleaners
- Food service equipment

This line of highly reliable switches utilize a snap-action bimetal disc, electrically and thermally isolated from the switch. The contacts are normally closed and open on rise when surface or ambient temperature set point is reached. The circuit will remain open until the manual reset button is depressed at approximately 30% below operating temperature. All models are 100% temperature tested which can be calibrated to your specification at the factory.

Value Added options available including over-mold and seal. For details regarding Value Added options, see page 51.

Models available from stock - subject to availability • OM Series - Open On-Rise (normally closed)

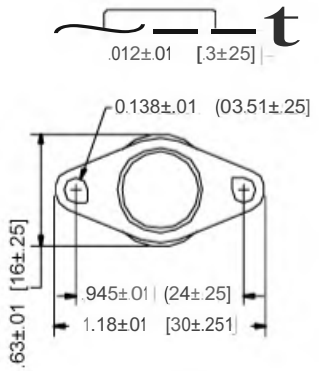
Open On-Rise	Model Number	Open ºF	Mounting	Terminals	Orientation from Mounting Holes
Open	OM-140-QC	140 ± 10	surface	.250 quick connects, horizontal	90º
Open	OM-150-QCV	150 ± 10	rotating bracket	.250 quick connects, vertical	●
Open	OM-160	160 ± 10	surface	solder	45º
Open	OM-180-QC	180 ± 10	surface	.187 quick connects, horizontal	45º
Open	OM-194	194 ± 10	surface	solder	90º
Open	OM-195-QC	195 ± 10	rotating bracket	.250 quick connects, horizontal	●
Open	OM-200-QCV	200 ± 10	surface	.250 quick connects, vertical	90º
Open	OM-212-QC	212 ± 10	rotating bracket	.250 quick connects, horizontal	●
Open	OM-225-QC	225 ± 10	rotating bracket	.250 quick connects, horizontal	●
Open	OM-250	250 ± 10	surface	solder	45º
Open	OM-250-QC	250 ± 10	surface	.250 quick connects, horizontal	45º
Open	OM-260-SO	260 ± 7	6-32 stud	.250 quick connects, horizontal	●
Open	OM-265-A	265 ± 10	air	solder	45º
Open	OM-285-QC	285 ± 10	surface	.250 quick connects, horizontal	45º
Open	OM-302-QCV	302 ± 10	surface	.250 quick connects, vertical	90º
Open	OM-320	320 ± 10	surface	solder	45º
Open	OM-320-QC	320 ± 10	surface	.250 quick connects, horizontal	45º

It is the customer’s sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

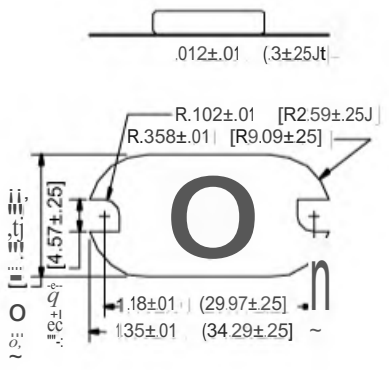
Special Order Brackets

For CA/OA (602S & 602K) and OM (603U-H & 603K) Series

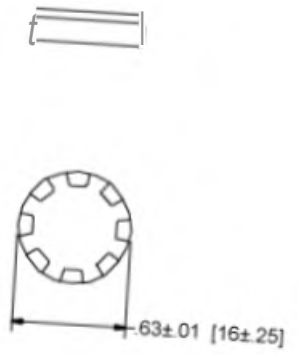
Code AS
Stainless • Fixed • Surface



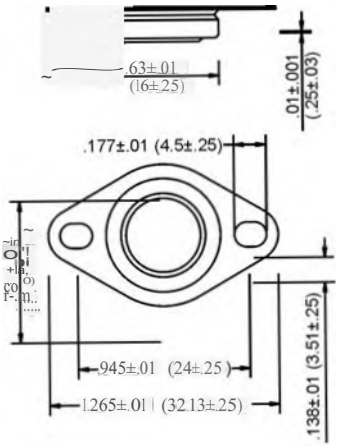
Code AU
Stainless • Fixed • Surface



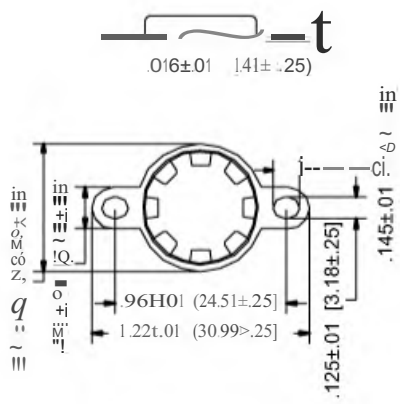
Code BO
Aluminum • No Bracket



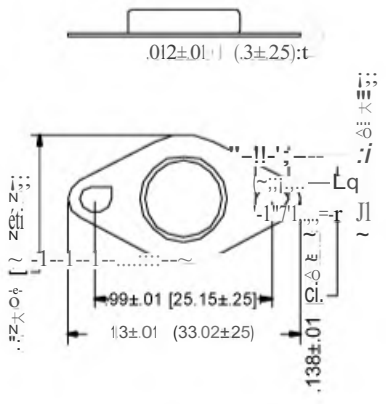
Code IO
Stainless • Fixed • Air



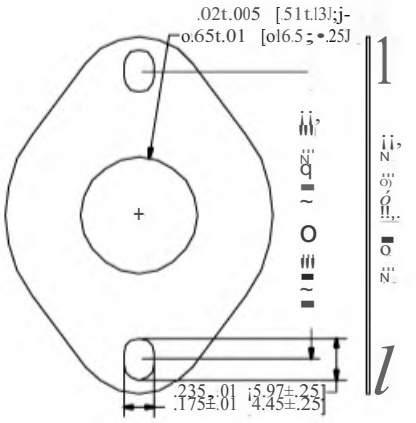
Code QL
Stainless • Rotating • Surface • Aluminum Cap



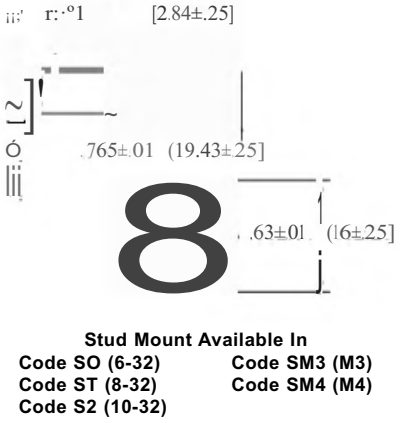
Code QF
Stainless • Fixed • Surface



Code B



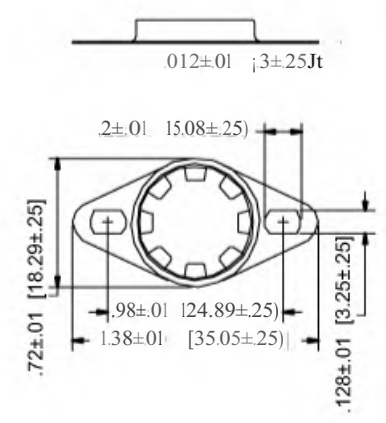
Stud Mount - Brass



Stud Mount Available In

Code SO (6-32)	**Code SM3 (M3)**
Code ST (8-32)	**Code SM4 (M4)**
Code S2 (10-32)	

Code FF
Stainless • Moveable

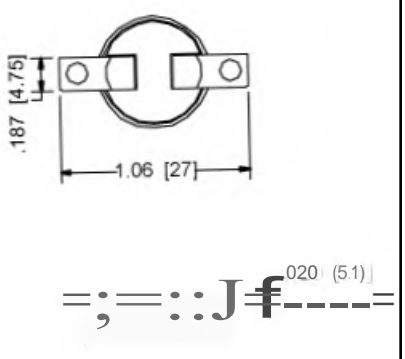


It is the customer's sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

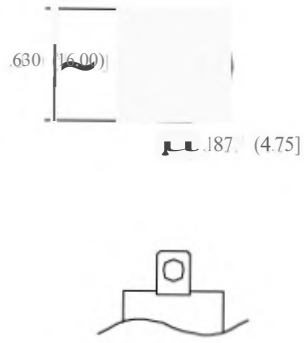
Special Order Terminals

For CA/OA (602S & 602K) and OM (603U-H & 603K) Series

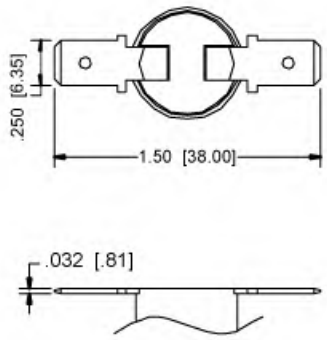
Code SH
Solder • Horizontal



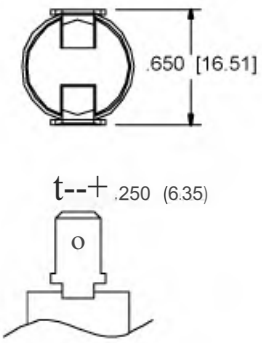
Code SV
Solder • Vertical



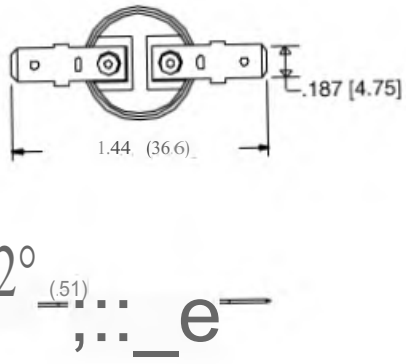
Code BH
.250 Quick Connects • Horizontal



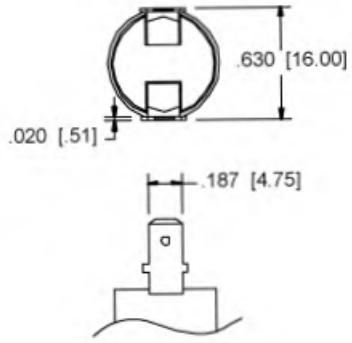
Code BV
.250 Quick Connects • Vertical



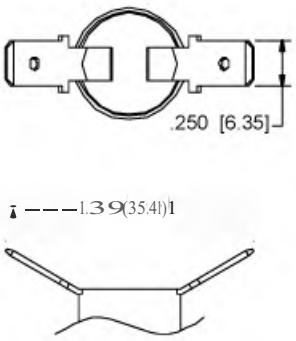
Code TH
.187 Quick Connects • Horizontal



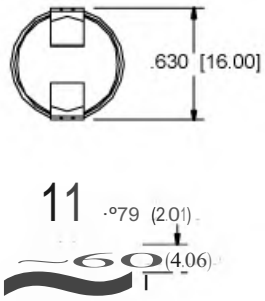
Code TV
.187 Quick Connects • Vertical



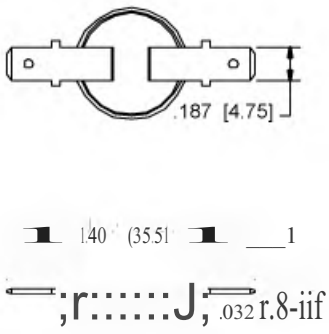
Code BQF
.250 Quick Connects @ 30°



Code PCB
Printed Circuit Board



Code T3H
.187 Quick Connects • Horizontal

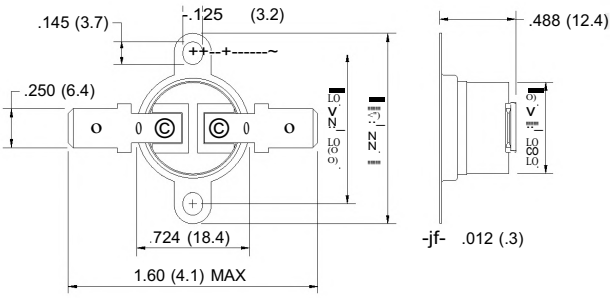


It is the customer's sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

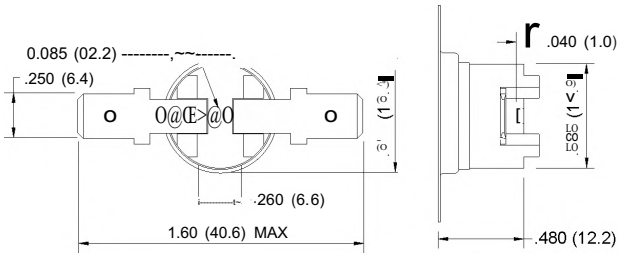
1/2” Disc Thermostats - Automatic Reset

CR/OR (622A and 622P) Series

CR/OR (622A) Series - Standard Case



622P Series - 4 Post Design (pictured above)



FEATURES

- 4-post design
- High temperature polyester
- Approval by UL, CSA, VDE, CE

APPLICATIONS

- Coffee makers
- Microwave ovens
- Sandwich makers

These SPST, snap-action disc thermostats are suitable for a drip-type coffee maker temperature limiting/regulating control. They are preset and tamper proof.

Each device is 100% tested and inspected before leaving the factory.

Gold contacts available upon request. Value Added options available including over-mold and seal. For details regarding Value Added options, see page 51.

SPECIFICATIONS

Electrical ratings	125VAC, 15 Amps, Resistive, 100,000 Cycles 250VAC, 10 Amps, Resistive, 100,000 Cycles
Temperature range	50ºF to 365ºF (10ºC to 185ºC)
Differential	18ºF to 45ºF (10ºC to 25ºC)
Environmental temperature	-4ºF to 392ºF (-20ºC to 200ºC)
Coffee maker, normal & dry override/over shoot	455ºF (235ºC)
Insulation resistance	100M Ω or more (with a 500VDC megger)
Circuit resistance	50m Ω or less (initial value)
Dielectric strength	1,500VAC/1 minute
Approvals	UL Recognized File No. E145478(S), XAPX2 CSA File No. LR63201 VDE File. F-14713, CE RoHS Compliant

Models available from stock - subject to availability • CR - Close On-Rise (normally open) • OR - Open On-Rise (normally closed)

Open On-Rise	Model Number	Open ºF	Close ºF	Mounting	Terminals
Open	OR-222*	222 ± 5	168 ± 10	no bracket	.250 quick connects, horizontal
Open	OR-285*	285 ± 7	245 ± 11	no bracket	.250 quick connects, horizontal
Open	OR-325**	325 ± 7	275 ± 11	rotating bracket	solder, horizontal
Open	OR-350-QC**	350 ± 9	320 ± 12	rotating bracket	.250 quick connects, horizontal
Open	OR-350-QCV**	350 ± 9	320 ± 12	rotating bracket	.250 quick connects, vertical
Open	OR-365-QC**	365 ± 9	335 ± 12	rotating bracket	.250 quick connects, horizontal

* 4-Post design
** Standard case

Note: Single operation (one-shot) feature is available. Once the contacts have opened, the contacts will not reclose until ambient temperature drops below -31ºF (-35ºC).

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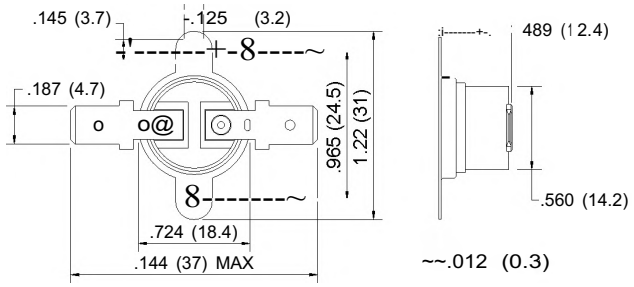
1/2” Disc Thermostats - Automatic Reset

CRA/ORA (625A) Series



FEATURES

- ISO 9000 certification
- High temperature case
- Quick and easy installation

APPLICATIONS

- Heaters
- Gas furnaces
- Commercial food equipment

SPECIFICATIONS

Electrical ratings	125VAC, 15 Amps, Resistive, 100,000 Cycles 250VAC, 10 Amps, Resistive, 100,000 Cycles
Temperature range	50ºF to 500ºF (10ºC to 260ºC)
Differential	27ºF to 100ºF (15ºC to 55ºC)
Environmental temperature	-40ºF to 554ºF (-40ºC to 290ºC)
Insulation resistance	100M Ω or more (with a 500VDC megger)
Circuit resistance	50m Ω or less (initial value)
Dielectric strength	1,500VAC/1 minute
Approvals	UL Recognized File No. E145478(S), XAPX2 C-UL Recognized File No. E145478, XAPX8, VDE, CE RoHS Compliant

These snap-action bimetal discs are housed in a ceramic case to handle extremely high temperatures. The increased factory calibrated set points are available up to 500ºF (260ºC). The contacts can either open or close on temperature rise.

All models are 100% temperature tested before leaving the factory.

Gold contacts available upon request. Value Added options available including over-mold and seal. For details regarding Value Added options, see page 51.

Models available from stock - subject to availability • CRA - Close On-Rise (normally open) • ORA - Open On-Rise (normally closed)

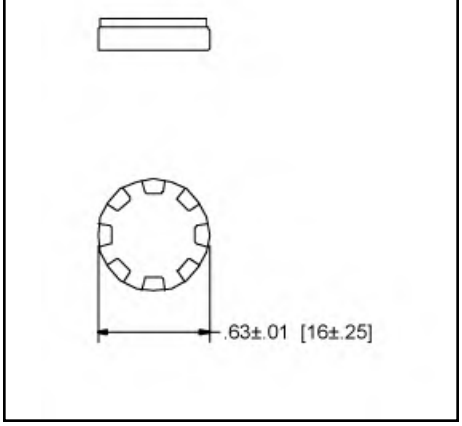
Open On-Rise	Model Number	Open ºF	Close ºF	Mounting	Terminals
Open	ORA-257-QCV	257 ± 9	230 ± 9	rotating bracket	.250 quick connects, vertical
Open	ORA-347-QCV	347 ± 16	284 ± 16	rotating bracket	.250 quick connects, vertical
Open	ORA-350-QC	350 ± 14	290 ± 20	rotating bracket	.187 quick connects, horizontal
Open	ORA-375-QC	375 ± 14	315 ± 20	rotating bracket	.250 quick connects, horizontal
Open	ORA-400-QC	400 ± 14	340 ± 20	rotating bracket	.250 quick connects, horizontal
Open	ORA-425-QC	425 ± 15	375 ± 20	rotating bracket	.250 quick connects, horizontal
Open	ORA-450-QC	450 ± 15	370 ± 20	rotating bracket	.250 quick connects, horizontal
Open	ORA-500-QC	500 ± 20	420 ± 20	rotating bracket	.250 quick connects, horizontal
Open	ORA-500-QCV50	500 ± 20	450 ± 20	rotating bracket	.250 quick connects, vertical

Note: Single operation (one-shot) feature is available. Once the contacts have opened, the contacts will not reclose until ambient temperature drops below -31ºF (-35ºC).

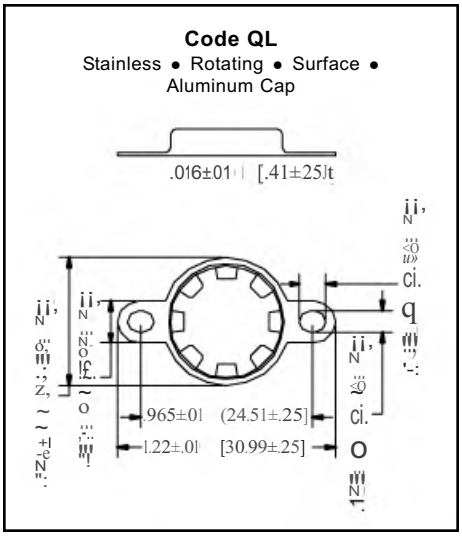
Special Order Brackets

For CR/OR (622A and 622P) and CRA/ORA (625A) Series

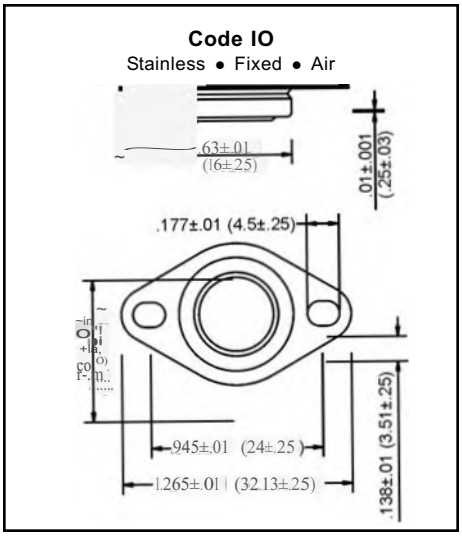
Code BO
Aluminum • No Bracket



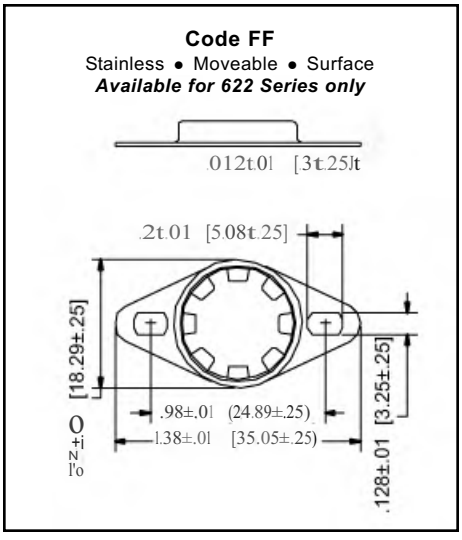
Code QL
Stainless • Rotating • Surface • Aluminum Cap



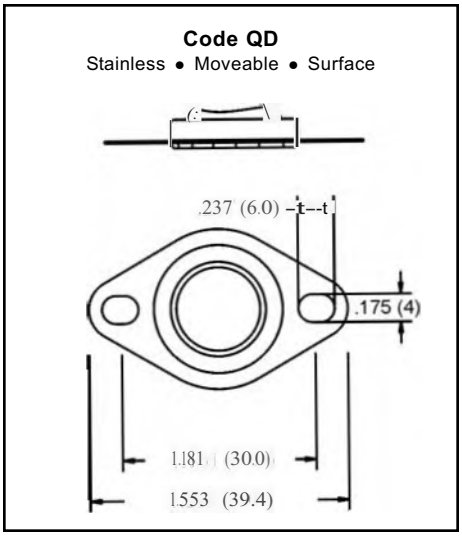
Code IO
Stainless • Fixed • Air



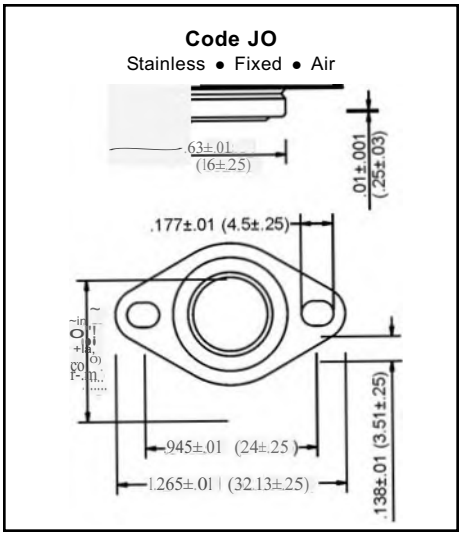
Code FF
Stainless • Moveable • Surface
Available for 622 Series only



Code QD
Stainless • Moveable • Surface



Code JO
Stainless • Fixed • Air



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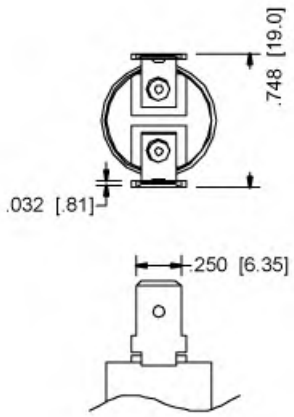
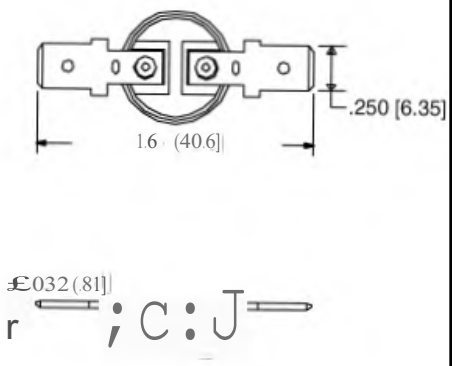
Special Order Terminals

For CR/OR (622A and 622P) and CRA/ORA (625A) Series

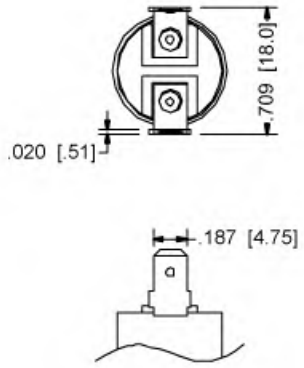
Code BV
.250 Quick Connects • Vertical



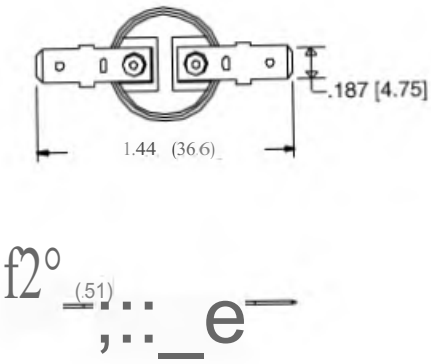
Code BH
.250 Quick Connects • Horizontal



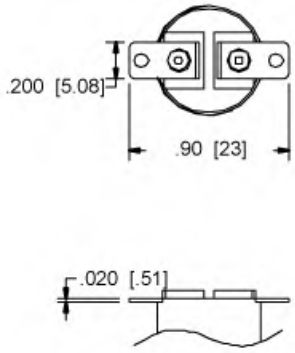
Code TV
.187 Quick Connects • Vertical



Code TH
.187 Quick Connects • Horizontal



Code SH
Solder Tabs • Horizontal



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Special Order Map
For CA/OA , OM, CR/OR, and CRA/ORA Series

Build Your Own Part

Model	Contacts	Function	Terminal Type	Bracket Type	Terminal Orientation	Set Point	ºF/ºC	Differential

Model

602S	CA/OA Series - 1/2” Automatic Reset	refer to pages 5-7
603U-H	OM Series - 1/2” Manual Reset	refer to page 8
622A	CR/OR Series - Standard Case - 1/2” Automatic Reset	refer to page 11
622P	CR/OR - 4-Post Case - 1/2” Automatic Reset	refer to page 11
625A	CRA/ORA - High Temperature - 1/2” Automatic Reset	refer to page 12

Contacts

S	Silver contacts
K	Gold contacts

Function

X	Open on-rise (normally closed)
Y	Close on-rise (normally open)

Terminal Type

Models CA/OA (602S) and OM (603U-H)	refer to page 10
Models CR/OR (622A and 622P) and CRA/ORA (625A)	refer to page 14

Bracket Type

Models CA/OA (602S) and OM (603U-H)	refer to page 9
Models CR/OR (622A and 622P) and CRA/ORA (625A)	refer to page 13

Terminal Orientation

0º
45º
90º

Example Part Number

602	S	X	BV	AS	90	145	ºF	30
Model	Contacts	Function	Terminal Type	Bracket Type	Terminal Orientation	Set Point	ºF/ºC	Differential

Click Here to Contact Us!

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Hermetically Sealed 1/2” Disc Thermostats
KC/KO (4344) Series

FEATURES
- Compact size
- Hermetically sealed
- Extreme low & high temps.

APPLICATIONS
- Military
- Aerospace
- Water temperature control

The Selco hermetically sealed thermostat is a snap-action disc control. Its welded, hermetically sealed construction was designed for applications where maximum shock and vibration resistance is required. The steel case provides protection from dust and moisture. Terminals are a solder type or weld and lead wires are available.

Gold contacts are available upon request.

Models available from stock - subject to availability
KO - Open On-Rise (normally closed)

Model Number	Open ºF	Close ºF
KO-450	450 ± 12	370 ± 12
KO-550	550 ± 25	470 ± 25

Temperature Settings - Special Order

Operating Temp. Range (ºF)	Available Differential Range ºF			Opening Temp. Tol (±ºF)	Closing Temp. Tol (±ºF)
	Min.	Std.	Max.		
-65 to -1	25	30	80	10	8
0 to 200	9	20	80	5	5
201 to 300	20	30	80	8	6
301 to 450	30	40	80	12	12
451 to 550	60	70	80	25	25

SPECIFICATIONS

Dielectric strength	1250VAC, rms, 60 cycles for 1 minute, terminal to case; per MIL-STD-202, Method 301
Switch action	SPST (snap-action)
Ambient temperature	-80ºF to +550Fº (-62ºC to 288ºC)
Contact resistance	0.050 Ω per max. per MIL-STD-202, Method 307
Shock resistance	100G, 6 milliseconds, per MIL-STD-202, Method 213
Vibration resistance	5-2000 cps, 20G per MIL-STD-202, Method 204, Condition D
Moisture resistance	MIL-STD-202, Method 106
Salt spray	MIL-STD-202, Method 101, Condition B, 5% solution
Leakage	1 x 10^{-5} ATM cc/sec. max., per MIL-STD-202, Method 112, Condition C
Approvals	UL File No. E34618 ***UL File Number found under Texas Instr. 4344*** C-UL File No. E34618, XAPX8 RoHS Compliant

Contact Ratings (Resistive)

30VAC/DC	125VAC	250VAC	Life Cycles
Amperes			
5.0	2.5	1.0	100,000
5.5	3.0	1.5	50,000
6.0	4.0	2.0	25,000
6.5	5.0	2.5	10,000
7.0	6.0	3.0	5,000

It is the customer’s sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

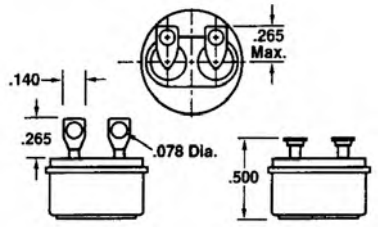
Hermetically Sealed 1/2” Disc Thermostats

KC/KO (4344) Series - Special Mounting Configurations

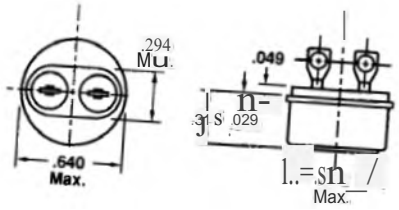
Special Mounting Configurations

* Drawings are subject to change, consult Selco for current dimensions.

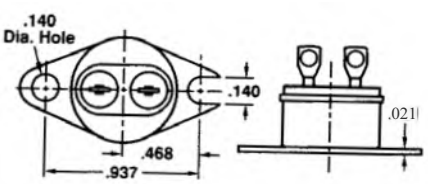
Terminal Dimensions



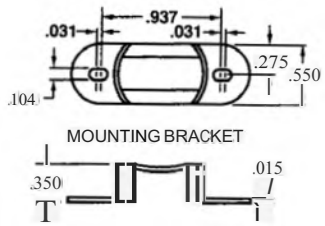
4344-7



4344-184

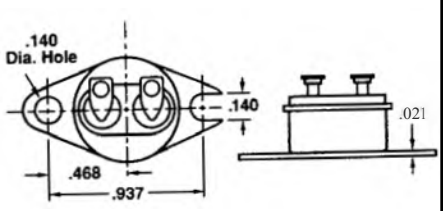


Loose Bracket

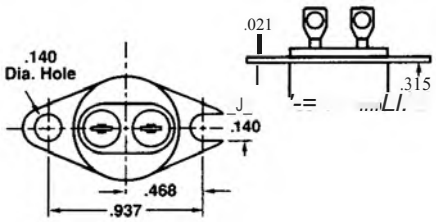


4344-32

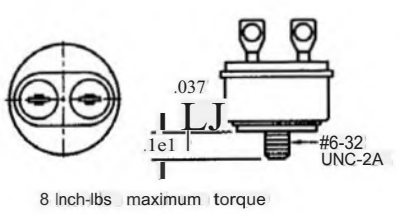
4344-144



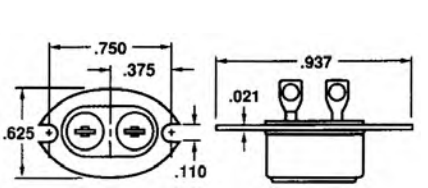
4344-145



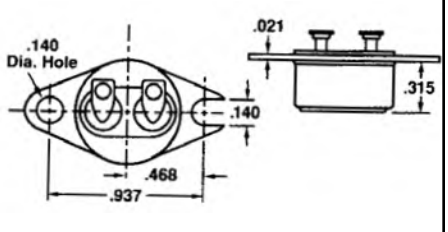
4344-13



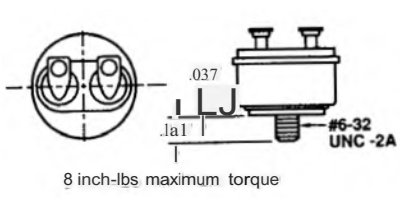
4344-14



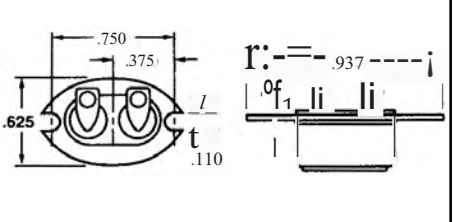
4344-221



4344-135



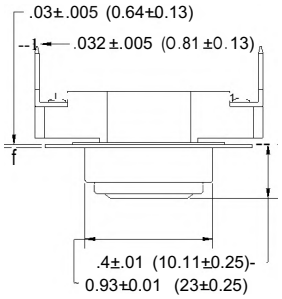
4344-63

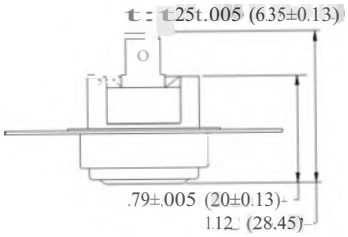


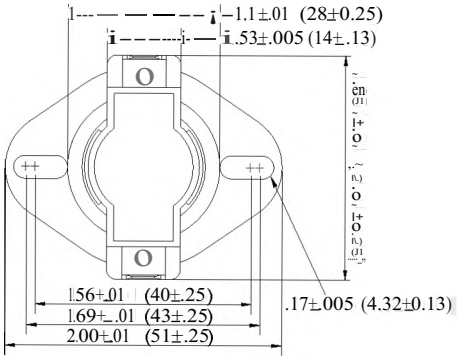
It is the customer’s sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

3/4” Disc Thermostats - Automatic Reset

SE (T10) Series - Airstream Mount







FEATURES

- 25 Amp capacity
- UL and CUL approved
- Factory calibrated to your specifications

APPLICATIONS

- H.V.A.C.
- Major appliances
- Medical/Lab equipment
- Commercial food eqpt.

Selco’s direct sensing thermostats are larger than our standard thermostats, giving them an even more powerful bimetallic disc and a higher electrical rating. They are ideal for use with heating and air conditioning systems as well as with industrial equipment. These models are designed for maximum airflow around the thermostat to give quick and accurate response.

These units feature a bimetallic, temperature-sensitive disc for snap-action in opening and closing the switch contacts. The bimetallic disc is thermally and electrically insulated from the electrical circuit, eliminating self-heating effects. Only the temperature of the controlled equipment causes the switch to actuate. Switch operation is rapid and positive due to the characteristics of the bimetallic disc and the wiping action of the current-carrying contacts. Contact chattering is virtually eliminated, as is false cycling and sparking. Exposed disc and single operation models available.

Models available from stock - subject to availability
Fan Controls • SE-F - Close On-Rise (normally open)

Model Number	Temperature Ranges	
	Open ºF	Close ºF
SE-F060	40 ± 9	60 ± 5
SE-F090	70 ± 9	90 ± 5
SE-F100	100 ± 9	80 ± 5
SE-F110	90 ± 9	110 ± 5
SE-F120	100 ± 9	120 ± 5
SE-F130	110 ± 9	130 ± 5
SE-F140	120 ± 9	140 ± 5
SE-F219H*	180 ± 9	219 ± 5

* Horizontal terminals

SPECIFICATIONS

Electrical ratings	120VAC, 240VAC, 25 Amps, Resistive, 60Hz 120VAC, 10FLA, 60LRA, 60Hz, Inductive 240VAC, 5FLA, 30LRA, 60Hz, Inductive 100,000 Cycles
Temperature range *(UL Models)*	33ºF to 302ºF (1ºC to 150ºC)
Temperature range *(Non-UL Models)*	302ºF to 350ºF (150ºC to 177ºC)
Differential	14ºF to 100ºF (8ºC to 56ºC) - SPST Models 27ºF to 100ºF (15ºC to 56ºC) - SPDT Models
Dielectric strength	1,500VAC/1 minute
Approvals	UL Recognized File No. E145478(S), XAPX2 C-UL Recognized File No. E145478, XAPX8

Models available from stock - subject to availability
Limit Controls • SE-L - Open On-Rise (normally closed)

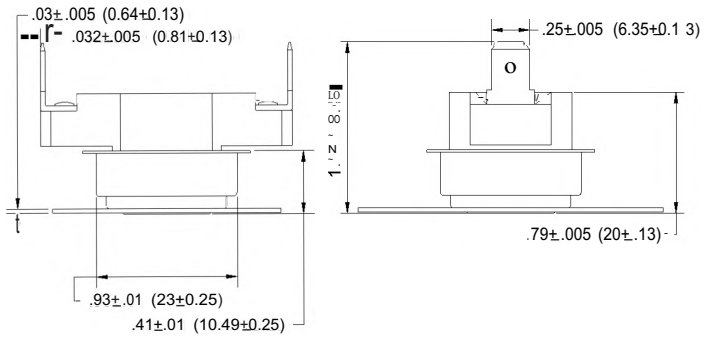
Model Number	Temperature Ranges	
	Open ºF	Close ºF
SE-L120	120 ± 7	106 ± 9
SE-L130	130 ± 7	115 ± 9
SE-L135	135 ± 7	110 ± 9
SE-L140	140 ± 7	100 ± 9
SE-L145	145 ± 7	120 ± 9
SE-L150	150 ± 7	110 ± 9
SE-L150-A	150 ± 7	125 ± 9
SE-L150-D	150 ± 7	130 ± 9
SE-L160	160 ± 7	120 ± 9
SE-L170	170 ± 7	130 ± 9
SE-L175	175 ± 7	155 ± 9
SE-L180	180 ± 7	150 ± 9
SE-L180A	180 ± 7	140 ± 9
SE-L190	190 ± 7	150 ± 9
SE-L194H*	194 ± 7	180 ± 9
SE-L200	200 ± 7	160 ± 9
SE-L210	210 ± 7	170 ± 9
SE-L230	230 ± 7	190 ± 9
SE-L240	240 ± 7	215 ± 9
SE-L250	250 ± 7	210 ± 9
SE-L255	255 ± 7	230 ± 9
SE-L300	300 ± 7	250 ± 9
SE-L325	325 ± 7	275 ± 9
SE-L350	350 ± 7	310 ± 9

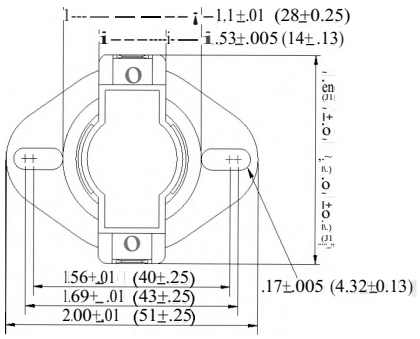
* Horizontal terminals

It is the customer’s sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

3/4” Disc Thermostats - Automatic Reset

SES (T11) Series - Surface Mount





FEATURES

- 25 Amp capacity
- UL and CUL approved
- Factory calibrated to your specifications

APPLICATIONS

- Pumps
- H.V.A.C.
- Automotive
- Medical/Lab Equipment

The T11 model is designed to attach directly to equipment to provide instantaneous temperature measurement and reliable protection. The units feature a bimetallic, temperature sensitive disc for snap-action in opening and closing switch contacts. The bimetallic disc is thermally and electrically insulated from the electrical circuit, eliminating self-heating effects. Only the temperature of the controlled equipment or its adjacent environment causes the switch to actuate.

Switch operation is rapid and positive due to the characteristics of the bimetallic disc and wiping action of the current carrying contacts. Contact chattering is virtually eliminated, as is false cycling and sparking. The thermostats are enclosed in compact, rugged, tamper-proof cases designed for quick and easy installation in the controlled equipment. Exposed disc and single operation models available.

Models available from stock - subject to availability
Fan Controls • SES-F - Close On-Rise (normally open)

Model Number	Temperature Ranges	
	Open ºF	Close ºF
SES-F058	44 ± 9	58 ± 5
SES-F120H*	100 ± 9	120 ± 5
SES-F130	115 ± 9	130 ± 5
SES-F140	140 ± 9	120 ± 5
SES-F200H*	160 ± 9	200 ± 5

* Horizontal terminals

SPECIFICATIONS

Electrical ratings	120VAC, 240VAC, 25 Amps, Resistive, 60Hz 120VAC, 10FLA, 60LRA, 60Hz, Inductive 240VAC, 5FLA, 30LRA, 60Hz, Inductive 100,000 Cycles
Temperature range *(UL Models)*	33ºF to 302ºF (1ºC to 150ºC)
Temperature range *(Non-UL Models)*	302ºF to 350ºF (150ºC to 177ºC)
Differential	14ºF to 100ºF (8ºC to 56ºC) - SPST Models 27ºF to 100ºF (15ºC to 56ºC) - SPDT Models
Dielectric strength	1,500VAC/1 minute
Approvals	UL Recognized File No. E145478(S), XAPX2 C-UL Recognized File No. E145478(S), XAPX8

Models available from stock - subject to availability
Limit Controls • SES-L - Open On-Rise (normally closed)

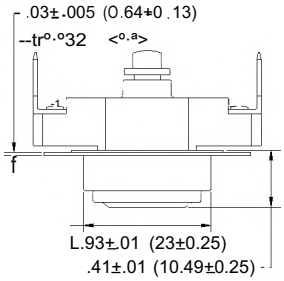
Model Number	Temperature Ranges	
	Open ºF	Close ºF
SES-L110	110 ± 7	96 ± 9
SES-L120	120 ± 7	106 ± 9
SES-L150	150 ± 7	130 ± 9
SES-L180	180 ± 7	150 ± 9
SES-L190	190 ± 7	160 ± 9
SES-L213H*	213 ± 7	155 ± 9
SES-L250	250 ± 7	220 ± 9
SES-L275H*	275 ± 7	245 ± 9

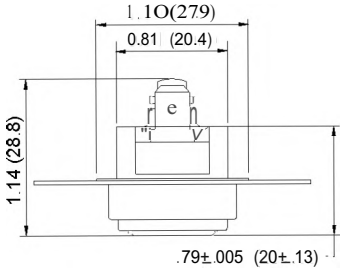
* Horizontal terminals

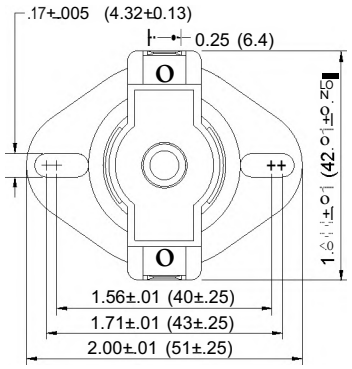
It is the customer’s sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

3/4” Disc Thermostats - Manual Reset

SE and SES (T10/T11) Series - Airstream and Surface Mount







FEATURES

- 25 Amp capacity
- Operation up to 350ºF
- Factory calibrated to your specifications

APPLICATIONS

- H.V.A.C.
- Major appliances
- Vending machines

Selco thermostats are widely used to control or protect high-power home appliances like dryers, dishwashers, home water heaters, and solar heaters. The switch mechanism is actuated by a snap-action bimetal disc, which may be enclosed or exposed.

Made to open on temperature rise, these SPST devices are available in a variety of mounting configurations. Temperature calibrations are preset and typically built to order. These units are not considered as “M2” trip free devices. Consult Selco for additional models available from stock.

Models available from stock - subject to availability
Limit Controls • SES-L - Open On-Rise (normally closed)

Model Number	Temperature Ranges
	Open ºF
SES-L200M*	200 ± 11
SES-L250HM*	250 ± 14
SES-L265HM*	265 ± 14
SES-L350M*	350 ± 16

* Mounting Configuration: Surface

SPECIFICATIONS

Electrical ratings	120VAC, 240VAC, 25 Amps, Resistive, 60Hz 120VAC, 10FLA, 60LRA, 60Hz, Inductive 240VAC, 5FLA, 30LRA, 60Hz, Inductive 5,000 Cycles
Temperature range *(UL Models)*	33ºF to 302ºF (1ºC to 150ºC)
Temperature range *(Non-UL Models)*	302ºF to 350ºF (150ºC to 177ºC)
Dielectric strength	1,500VAC/1 minute
Approvals	UL Recognzied File No. E145478(S), XAPX2 C-UL Recognized File No. E145478(S), XAPX8

Models available from stock - subject to availability
Limit Controls • SE-L - Open On-Rise (normally closed)

Model Number	Temperature Ranges
	Open ºF
SE-L090M*	90 ± 11
SE-L120M*	120 ± 11
SE-L130M*	130 ± 11
SE-L160M*	160 ± 11
SE-L170HM*	170 ± 11
SE-L200M*	200 ± 11
SE-L250M*	250 ± 14
SE-L350M*	350 ± 16

* Mounting Configuration: Airstream

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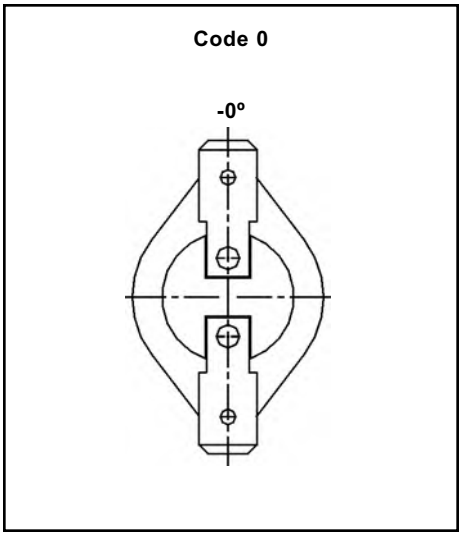
It is the customer’s sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

Special Order Terminal Orientations

For SE and SES (T10 and T11) Series

Code 0



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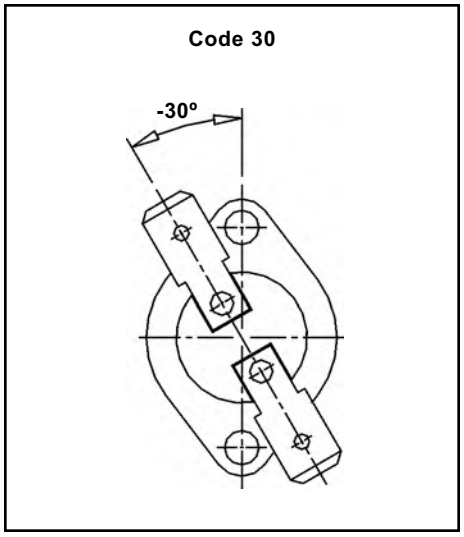

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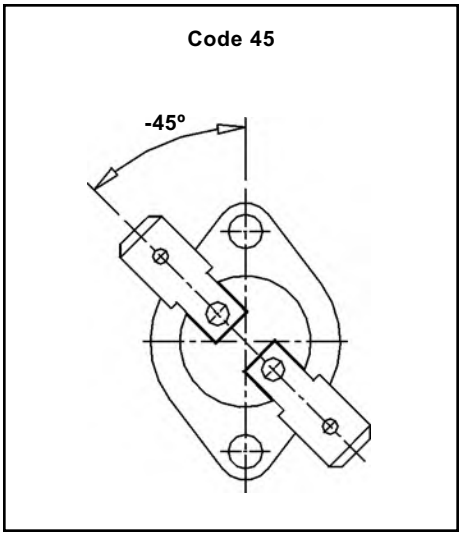

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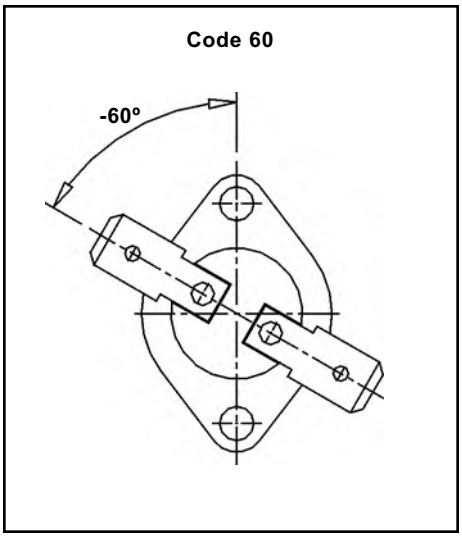

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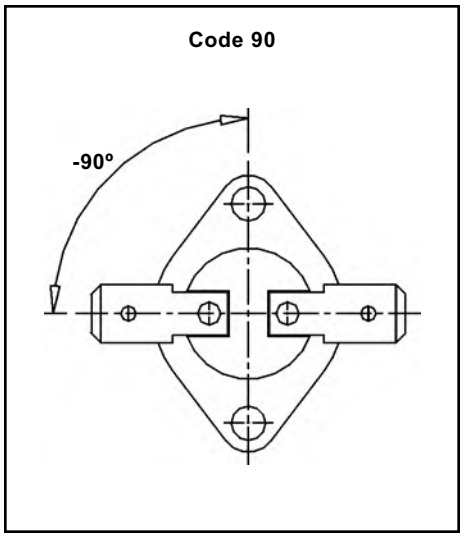

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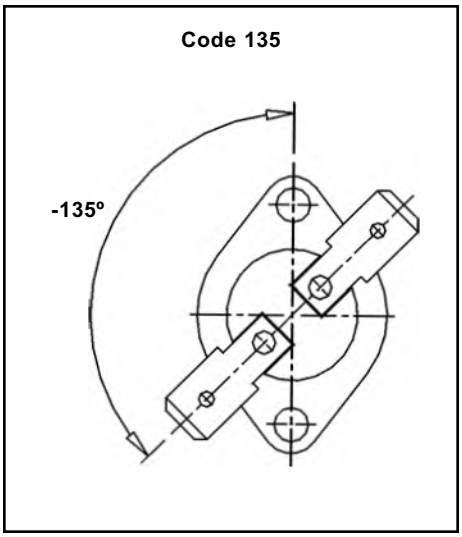

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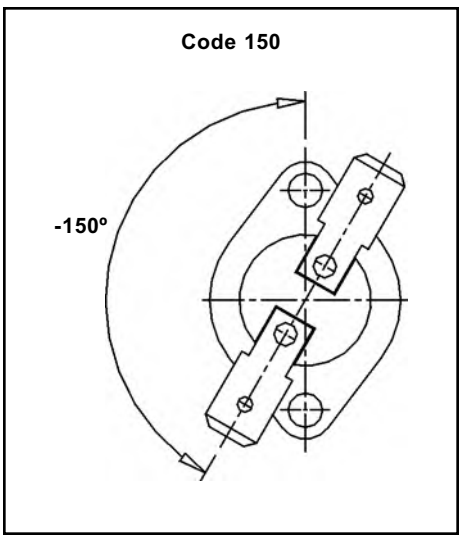


It is the customer's sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

Special Order Map
For SE and SES (T10 and T11) Series

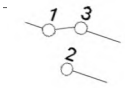
Build Your Own Part

Model	Reset	Electrical Function	Terminal Type	Terminals	Terminal Orientation	Set Point ºF	Differential ºF

Model
T10 SE Series - Airstream Mount - refer to pages 17-19
T11 SES Series - Surface Mount - refer to pages 17-19

Reset
1 Automatic
2 Manual (Open On-Rise Only)
3 Single operation

Electrical Function
1 Open on-rise (normally closed) (S.P.S.T.)
2 Close on-rise (normally open) S.P.S.T.)
3 Single pole - double throw S.P.D.T.)



Terminal Type
3 .250 quick connects - Faston (6.3mm - male)
4 M4 (4mm screw)
5 S.P.D.T.:
.250 quick connects - Faston 6.3mm - male
.250 quick connects - Faston 6.3mm - female
.187 quick connects - Faston 4.8mm - male
6 #8-32 screw

Terminals
1 Horizontal
3 Vertical

Terminal Orientation (from mount holes) - refer to page 21
Code 0 0º
Code 30 30º
Code 45 45º
Code 60 60º
Code 90 90º
Code 135 135º
Code 150 150º

Set Point (specify in ºF)

Differential (specify in ºF)

Example Part Number

T10	1	1	3	3	90º	170º	30º
Model	Reset	Electrical Function	Terminal Type	Terminals	Terminal Orientation	Set Point ºF	Differential ºF

It is the customer's sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

Encapsulated Thermostats
SEO (T) Series

FEATURES
- 10 and 25 amp loads
- Dust and moisture proof
- Wide range of operating temperatures

APPLICATIONS
- Freezers
- Refrigerators
- Air conditioners

The SEO (T) Series automatic reset thermostat was designed for humid environments. A resin filled thermoplastic cap covers the thermostat. The fixed factory calibrated bimetal disc is located adjacent to the surface to be monitored. This will provide a rapid response to temperature changes. Each device is built to open or close on rise at any desired set point.

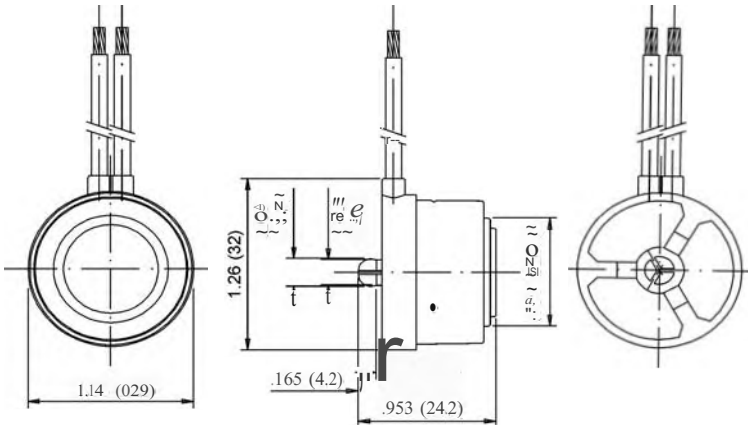
Lead wires are normally 6" in length. Custom lead lengths are available. The T16 an T17 models are available with #18 gauge wire. Models T21 and T22 are available with #14 gauge wire. Numerous types of terminals can be furnished at an extra cost.

For use in millivolt applications, the T Series carries a 12Vdc, 250mA rating.

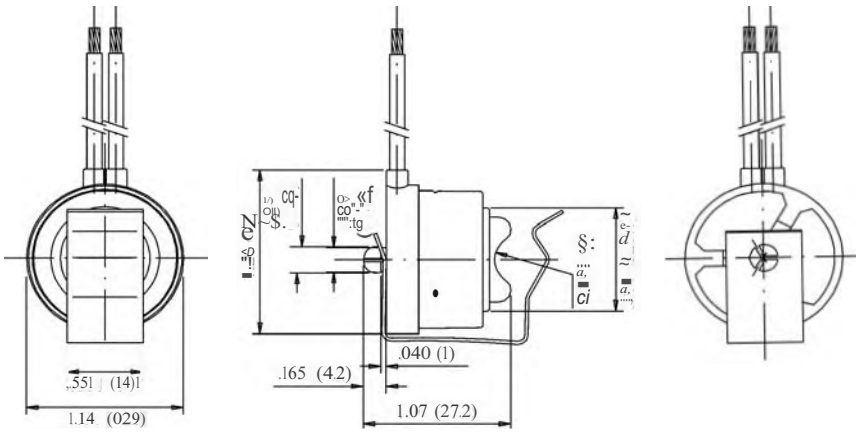
SPECIFICATIONS

Temperature range	-4ºF to 212ºF (-20ºC to 100ºC)
Differential (minimum)	20ºF (11ºC), S.P.S.T. Temp range: -4ºF to 32ºF (-20ºC to 0ºC) 14ºF (8ºC), S.P.S.T. Temp range: 32ºF to 212ºF (0ºC to 100ºC) 27ºF (15ºC) minimum, S.P.D.T.
Environmental temperature	-4ºF to 212ºF (-20ºC to 100ºC)
Electrical ratings	
T16 and T17 Models	120VAC, 10 Amps, Resistive, S.P.S.T. 120VAC, 5.8 Amps, Inductive, S.P.S.T. 250VAC, 5 Amps, Resistive, S.P.S.T. 250VAC, 2.9 Amps, Inductive, S.P.S.T. 100,000 Cycles
T21 and T22 Models	220VAC, 25 Amps, S.P.S.T. or S.P.D.T. 100,000 Cycles
T60 Model	120/250VAC, 16 Amps, S.P.S.T.
Dielectric strength	
T16 and T17 Models	1500VAC/1 minute
T21 and T22 Models	1480VAC/1 minute
Approvals	UL Recognized File No. E145478(S), XAPX2 C-UL Recognized File No. E145478(S), XAPX8 VDE RoHS Compliant

T16 Model - Without Bracket
Stainless steel cover

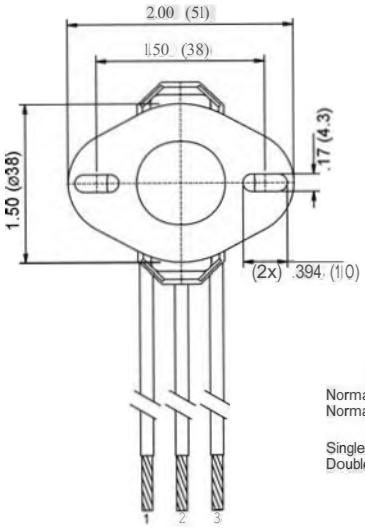


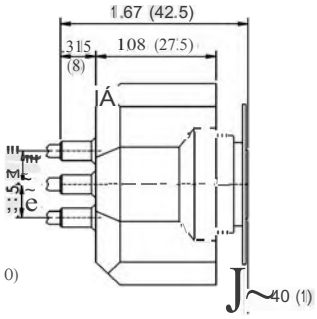
T17 Model - Auxiliary Clip Mount
Stainless steel cover - 3/8" Clip - complete clips available

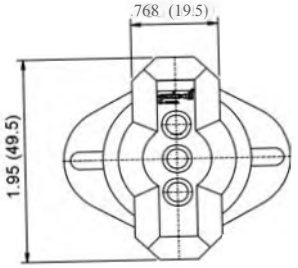


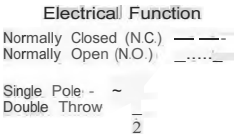
It is the customer's sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

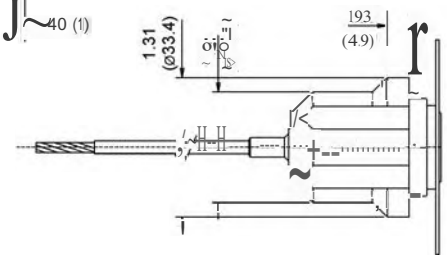
T21 Model - With Bracket
Stainless steel cover



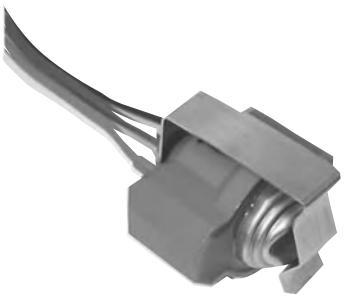


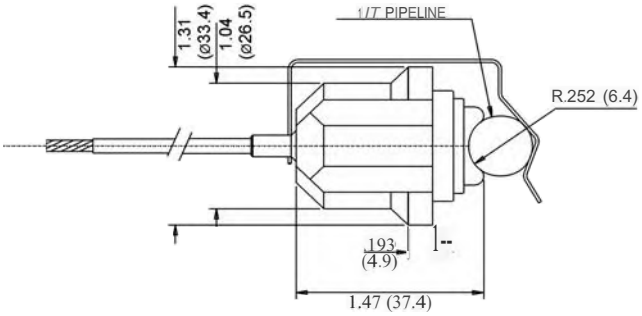


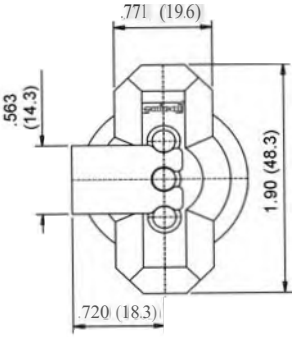


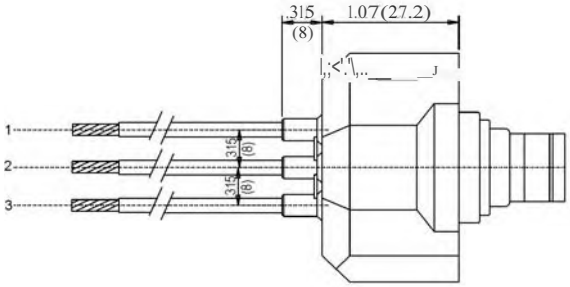


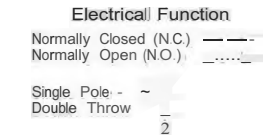
T22 Model - Auxiliary Clip Mount
Stainless steel cover - 3/8" and 1/2" clips



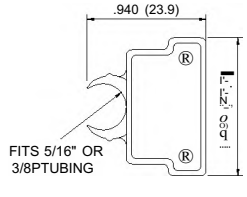


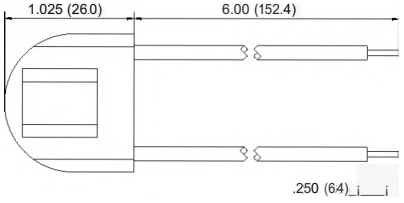






T60 Model - Plastic Body





It is the customer's sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

Encapsulated Thermostats
Special Order Map for SEO (T) Series

Build Your Own Part

Model	Electrical Function	Set Point (ºF)	Differential (ºF)	Lead Lengths (inches)	Tube

Model

T16	Without bracket - stainless steel cover (refer to page 23)
T17	Auxiliary clip mount - stainless steel cover - 3/8” clip (refer to page 23)
T21	With bracket - stainless steel cover (refer to page 24)
T22	Auxiliary clip mount - stainless steel cover - 3/8” and 1/2” clips (refer to page 24)
T60	Plastic body (refer to page 24)

Electrical Function

1	S.P.S.T. - Open on-rise (normally closed)
2	S.P.S.T. - Close on-rise (normally open)
3	S.P.D.T. (T21 and T22 models only)

Set Point (specify in ºF)

Differential (specify in ºF)

Lead Length (specify in inches) - standard lead length: 6”

Tube Size

1	3/8” (T17, T22 and T60 models only)
2	1/2” (T22 model only)
3	5/16” (T60 model only)

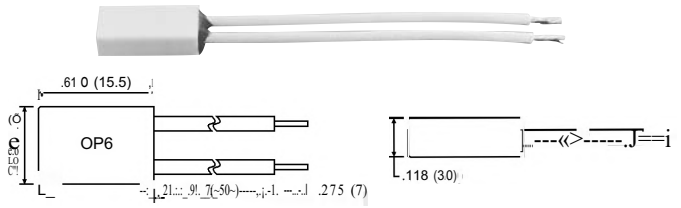
Example Part Number

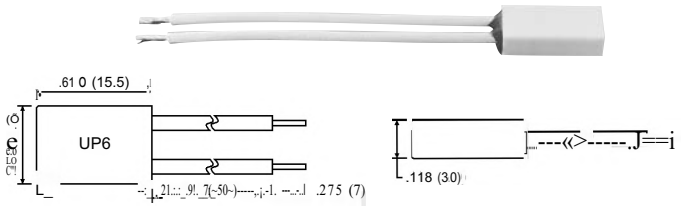
T17	1	60	20	12	1
Model	Electrical Function	Set Point (ºF)	Differential (ºF)	Lead Lengths (inches)	Tube Size

It is the customer’s sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

Thermal Protector

OP6 Series (Close On-Rise) and UP6 Series (Open On-Rise)





FEATURES
- Low cost
- PBT enclosure
- Snap-action bimetal technology

APPLICATIONS
- Transformers
- Motor protection
- Timer applications
- Alarm signal controller

The OP6 Series (OP6, OP61, OP62) thermal protectors close an electrical circuit. They are a snap-action device with quick make/quick break, fast sensing and switching action. These self-resetting devices feature a reinforced PBT-enclosure which make additional sleeving unnecessary. Various leads and terminations are available.

SPECIFICATIONS

Variations	
OP6	Without lead wires, 2 welding terminals
OP61	Uninsulated solid wires, bare
OP62	Stranded insulated wires, tin-coated - 24AWG Standard lead length: 50mm + 7mm
Temperature range	140ºF to 284ºF (60ºC to 140ºC)
Temperature tolerance	±9ºF (±5ºC) Standard
Standard differential	50ºF±25ºF (30ºC±15ºC)
Electrical ratings	125VAC, 4 Amps, Resistive, 10,000 Cycles 250VAC, 2.5 Amps, Resistive, 10,000 Cycles
Contact resistance	50m Ω or less (initial value)
Approvals & contact ratings	
UL873 *OP6, OP61 and OP62 Models*	Regulating 125VAC, 4 Amps, Resistive, 6,000 Cycles 284ºF maximum (140ºC maximum) File No. E50124
CSA *OP6, OP61 and OP62 Models*	Std. C22.2, No. 24 - Regulating (c-UL) 125VAC, 4 Amps, Resistive, 6,000 Cycles 284ºF maximum (140ºC maximum) File No. E50124)
EN60730-2-2 *OP6, OP61 and OP62 Models*	Thermal Motor Protector 250VAC, 284ºF maximum (140ºC maximum) File No. 8921.00-4510-0026
EN60730-2-9 *OP6, OP61 and OP62 Models*	Thermal Cut-Out 250VAC, 2.5 Amps, Resistive, 10,000 Cycles 250VAC, 1.6 Amps, Inductive, 10,000 Cycles 284ºF maximum (140ºC maximum) File No. 8921.00-4510-0027
EN60730-2-9 *OP61G and OP62G Models*	Thermal Cut-Out 250VAC, 0.5 Amps, Resistive, 10,000 Cycles 284ºF maximum (140ºC maximum) File No. 8921.00-4510-0027
	RoHS Compliant
Contact system	
OP6, OP61, and OP62 Models	Close on-rise (normally open) Silver contacts
OP6#G	Close on-rise (normally open) PGS (Platinum/Gold/Silver alloy) cross-bar contacts for micro electric load of electronic applications

FEATURES
- PBT enclosure
- Not current sensitive
- Suitable for PCB mounting

APPLICATIONS
- Solenoids
- Motor protection
- Lighting ballasts

The UP6 Series (UP6, UP61 and UP62) PBT enclosed thermal protectors, the smallest thermal protector available, features an excellent performance in thermal response due to the compact miniature design and unique engineering techniques of bimetal disc mounting.

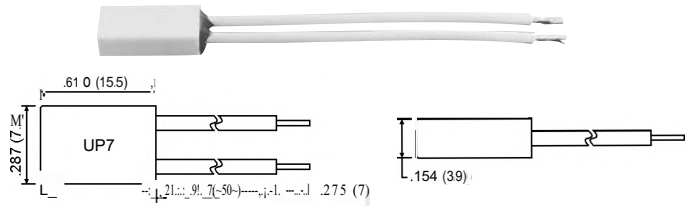
SPECIFICATIONS

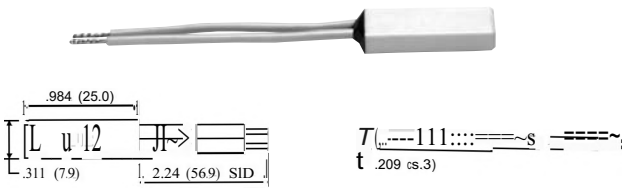
Variations	
UP6	Without lead wires
UP61	Uninsulated solid wires
UP62	Stranded insulated wires - 24AWG Standard lead length: 50mm + 7mm
Temperature range	140ºF to 284ºF (60ºC to 140ºC)
Temperature tolerance	±9ºF (±5ºC) Standard
Standard differential	50ºF±25ºF (30ºC±15ºC)
Electrical ratings	125VAC, 4 Amps, Resistive, 10,000 Cycles 250VAC, 2.5 Amps, Resistive, 10,000 Cycles
Contact resistance	50m Ω or less (initial value)
Approvals & contact ratings	
UL873 *UP6, UP61 and UP62 Models*	Regulating 125VAC, 4 Amps, Resistive, 6,000 Cycles 284ºF maximum (140ºC maximum) File No. E50124
CSA *UP6, UP61 and UP62 Models*	C22.2, No. 24 (c-UL) - Regulating 125VAC, 4 Amps, Resistive, 6,000 Cycles 284ºF maximum (140ºC maximum) File No. E50124
EN60730-2-2 *UP6, UP61 and UP62 Models*	Thermal Motor Protector 250VAC, 284ºF maximum (140ºC maximum) File No. 8921.00-4510-0026
EN60730-2-9 *UP6, UP61 and UP62 Models*	Thermal Cut-Out 250VAC, 2.5 Amps, Resistive, 10,000 Cycles 250VAC, 1.6 Amps, Inductive, 10,000 Cycles 284ºF maximum (140ºC maximum)
EN60730-2-9 *UP61G and UP62G Models*	Thermal Cut-Out 250VAC, 0.5 Amps, Resistive, 10,000 Cycles 284ºF maximum (140ºC maximum) File No. 8921.00-4510-0027
	RoHS Compliant
Contact system	
UP6, UP61, and UP62 Models	Open on-rise (normally closed) Silver contacts
UP6#G Models	Open on-rise (normally closed) PGS (Platinum/Gold/Silver alloy) cross-bar contacts for micro power applications

It is the customer's sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

Thermal Protector

UP7 Series (Open On-Rise) and UI2 Series (Open On-Rise)





FEATURES

- Low cost
- Durable plastic case
- Smallest motor protector approved by UL

APPLICATIONS

- Solenoids
- Small motors
- Transformers
- Electronic appliances

The UP7 Series (UP7, UP71, UP72) PBT enclosed thermal protectors are compact 1/2HP (373W) motor protectors. The unique engineering techniques of holding the bimetal disc result in excellent performance in heat response.

SPECIFICATIONS

Variations	
UP7	Without lead wires, 2 welding terminals
UP71	Uninsulated solid wires, bare
UP72	Stranded insulated wires, tin-coated - 22AWG Standard lead length: 50mm + 7mm
Temperature range	140ºF to 302ºF (60ºC to 150ºC)
Temperature tolerance	±9ºF (±5ºC) Standard
Standard differential	50ºF±25ºF (30ºC±15ºC)
Electrical ratings	125VAC, 4 Amps, Resistive, 10,000 Cycles 250VAC, 2.5 Amps, Resistive, 10,000 Cycles
Contact resistance	50m Ω or less (initial value)
Approvals & contact ratings	
EN60730-2-2 *UP7 Model*	Thermal Motor Protector 250VAC, 302ºF maximum (150ºC maximum) File No. 8921.00-4510-0026
EN60730-2-9 *UP7 Model*	Thermal Cut-Out 250VAC, 2.5 Amps, Resistive, 10,000 Cycles 250VAC, 1.6 Amps, Inductive, 10,000 Cycles 302ºF maximum (150ºC maximum) File No. 8921.00-4510-0027
UL2111 *UP71 and UP72 Models*	Motor Protector 125V/250VAC, 1/2HP maximum 302ºF maximum (150ºC maximum) File No. E52703
CSA *UP71 and UP72 Models*	Std. C22.2, No. 77 - Motor Protector 125V/250VAC, 1/2HP maximum 302ºF maximum (150ºC maximum) File No. E52073
	Std. C22.2, No. 77 - Motor Protector 125V/250VAC, 3.75FLA File No. LR35080
EN60730-2-2 *UP71 and UP72 Models*	Thermal Motor Protector 250VAC, 302ºF maximum (150ºC maximum) File No. 8921.00-4510-0026
EN60730-2-9 *UP71 and UP72 Models*	Thermal Cut-Out 250VAC, 2.5 Amps, Resistive, 10,000 Cycles 250VAC, 1.6 Amps, Inductive, 10,000 Cycles 302ºF maximum (150ºC maximum) File No. 8921.00-4510-0027
	RoHS Compliant
Contact system	
UP7, UP71, and UP72 Models	Open on-rise (normally closed) Silver contacts

FEATURES

- PBT enclosure
- Designed for high rated motors
- Snap-action bimetal technology

APPLICATIONS

- Power supplies
- Motor protection
- Electronic appliances

The PBT enclosed UI2 Series offers both thermal conductivity and electrical insulation with no need for additional insulation sleeves. With its large current carrying capacity, the UI2 Series is ideal for more demanding applications and solutions.

SPECIFICATIONS

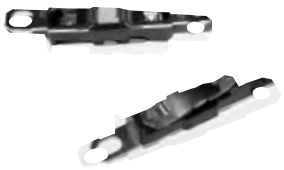
Variation	
UI2	Stranded insulated wires - 20AWG
Temperature range	140ºF to 302ºF (60ºC to 150ºC)
Temperature tolerance	±9ºF (±5ºC) Standard
Standard differential	50ºF±25ºF (30ºC±15ºC)
Electrical ratings	125VAC, 12 Amps, Resistive, 6,000 Cycles 250VAC, 10 Amps, Resistive, 10,000 Cycles
Contact resistance	50m Ω or less (initial value)
Approvals & contact ratings	
CMJ	Registration No. J-22 125VAC, 8 Amps, Resistive, 10,000 Cycles 266ºF maximum (130ºC maximum)
UL2111	Motor Protector 125VAC, 1/2HP maximum 302ºF maximum (150ºC maximum) File No. E52703
UL873	Limiting 125VAC, 6 Amps, Resistive, 100,000 Cycles 284ºF maximum (140ºC maximum) File No. E50124
	Regulating 125VAC, 12 Amps, Resistive, 6,000 Cycles 284ºF maximum (140ºC maximum) File No. E50124
CSA	Std. C22.2, No. 77 - Motor Protector 125VAC, 293ºF maximum (145ºC maximum) File No. LR35080
	Std. C22.2, No. 24 - Regulating 125VAC, 6 Amps, Resistive, 100,000 Cycles 293ºF maximum (145ºC maximum) File No. LR35080
EN60730-2-2	Thermal Motor Protector 250VAC, 311ºF maximum (155ºC maximum) File No. 8921.00-4510-7028
E60730-2-9	Thermal Cut-Out 250VAC, 10 Amps, Resistive, 1,000 Cycles 250VAC, 8 Amps, Inductive, 1,000 Cycles 250VAC, 10 Amps, Resistive, 10,000 Cycles From 131ºF to 311ºF (55ºC to 155ºC) File No. 8921.00-4510-7029
	RoHS Compliant
Contact system	
UI2	Open on-rise (normally closed)

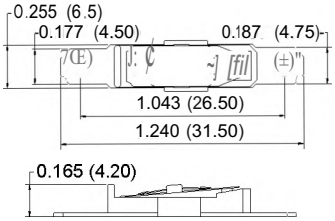
It is the customer's sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

Thermal Protectors - Self Hold

UB8P and UB81P Series

UB8P Model





FEATURES

- Phenol resin base
- Built-in PTC heater for self-hold
- Quick thermal response due to exposure of the bimetallic element

APPLICATIONS

- Mixers
- Blenders
- Grinders
- Dishwashers
- Space heaters

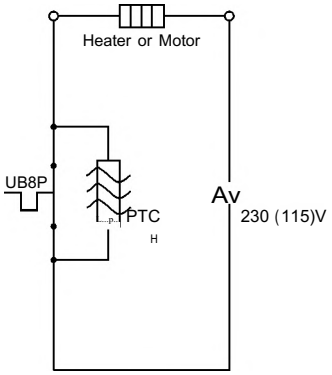
Models UB8P (exposed model - shown above) and UB81P (enclosed model) Self-Hold Thermal Cut-Out and Thermal Protectors are designed to provide overheat protection in high voltage applications. With a high 16 Amp capability, the new models are well suited for thermal overload protection in a broad range of applications.

The body of these surface mount devices are manufactured of phenolic resin and feature a new patent pending partition wall design that isolates the switch from the main body. This design effectively controls arcing that can cause a break in voltage contact (particularly in 250V applications), ensuring continuous operation to setpoint. The UB81P features a reinforced PBT enclosure for dust-proof applications; the UB8P has an exposed bi-metallic element for high accuracy and fast response to ambient air temperature.

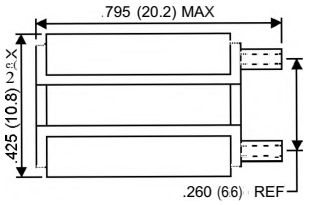
Both models incorporate a “self-hold” non-self resetting function that provides a high level of operational safety, especially in appliances with moving parts. The “self-hold” function ensures that after the element reaches its pre-set open temperature, the internal heater activates to maintain a self-regulating temperature, preventing the switch from resetting until the user disconnects the power.

SPECIFICATIONS

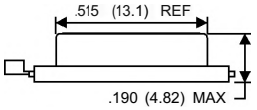
Temperature range *(UL Approved models)*	167ºF to 257ºF (75ºC to 125ºC)
Environmental temperature	±9ºF (±5ºC) Standard
Differential	50ºF±25ºF (30ºC±15ºC)
Electrical ratings	125VAC, 16 Amps, Resistive, 6,000 Cycles
Contact resistance	50m Ω or less (initial value)
Approvals & contact ratings	
UL-873	Regulating (manual reset) 125VAC, 16 Amps, Resistive, 6,000 Cycles 257ºF Maximum (125ºC Maximum) File No. E50124
EN60730-2-9	Temperature Limiter 250VAC, 10 Amps, Resistive, 6,000 Cycles 250VAC, 5 Amps, Inductive, 6,000 Cycles 257ºF Maximum (125ºC Maximum) File No. 8921.00-4521-0039 RoHS Compliant



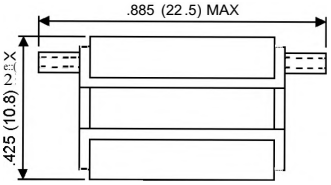
It is the customer’s sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements



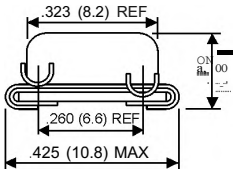
Type A (radial)



Type A (side view)



Type B (axial)



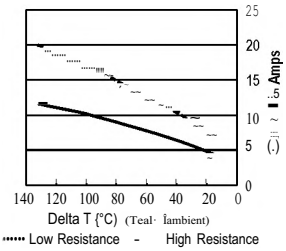
Type A (end view)

The S7AM Thermal Protector is a thermally operated snap-action device which delivers the maximum protection in the smallest package. The operating principle of the S7AM is both simple and effective. At the heart of the protector is a bimetal snap-action disc. When the temperature of this disc reaches its calibrated temperature it snaps open, resulting in an open circuit. This temperature is reached by either an increase in ambient temperature, an increase in current flowing through the disc, or a combination of both. After the S7AM breaks the circuit, the system cools and the S7AM automatically resets allowing power to be restored to the circuit.

Each S7AM rating has a bimetal disc designed and manufactured for that specific temperature rating. Each individual device is then calibrated and checked for opening temperature. This results in precise operating characteristics necessary to achieve consistent, reliable performance over the required life cycle.

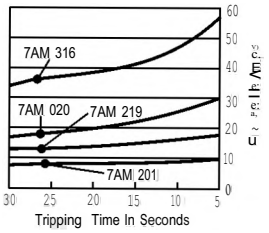
Ultimate Trip Current vs. Delta Temperature

Approximation, to be used only for selecting samples for verification tests.



Note: Delta T is the difference between the zero current calibrated opening temperature (T_{cal}) and ambient temperature ($T_{ambient}$) at the protector location.

Average First Cycle Tripping Time vs. Current (25ºC Ambient)



FEATURES

- Miniature size
- Gasket steel case
- Individually temperature tested and calibrated
- Wide selection of leads and insulating sleeves
- Positive make and break with snap-action disc
- Repeatable temperature performance over life

APPLICATIONS

- HID ballasts
- Transformers
- Battery packs
- Lighting ballasts
- Vacuum cleaners
- Split capacitor motors
- Automotive accessory, solenoids, PC boards and other applications

SPECIFICATIONS

Electrical ratings	16VDC, 20 Amps, 10,000 Cycles 120VAC, 22 Amps, 10,000 Cycles 277VAC, 8 Amps, 10,000 Cycles 600VAC, 4 Amps, 10,000 Cycles
Dielectric strength	900 Volts
Approvals	***UL File Numbers found under Texas Instr. 7AM***
UL2111	Motor Protection - File E15962
UL873	Limit and Regulating Controls - File E34618
CSA	Std. C22.2, No. 77 - Motor Protection File No. 11372 Std. C22.2, No. 74 Limit and Regulating Controls - File No. 24458
KEMA (ENEC) EN60730-2-2	Motor Protection - File No. 2014531.03
KEMA (ENEC) EN60730-2-3	Ballast Protection - File No. 2014531.03
KEMA (ENEC) EN60730-2-9	Thermal Cut-Out - File No. 2014531.03
	RoHS Compliant

PART NUMBER SYSTEM

S7AM XXX X X - XXX - X

Standard Opening Temperature		
Opening Temp ºC	* Low Resistance Bimetal Disc	** High Resistance Bimetal Disc
	Code	
65	020	●
70	021	201
75	022	202
80	023	203
85	024	204
90	025	205
95	026	206
100	027	207
105	028	208
110	029	209
115	030	210
120	031	211
125	032	212
130	033	213
135	034	214
140	035	215
145	036	216
150	037	217
155	038	218
160	039	219
165	040	●
170	336	●
175	316	●

Terminal Configuration	
Code	Terminals
A	Same end
B	Opposite end

Temperature Tolerance	
Code	Tolerance
5	±5ºC

Physical Characteristics
i.e. Wire leads, insulating sleeves 18AWG - largest wire option 22AWG - smallest wire option

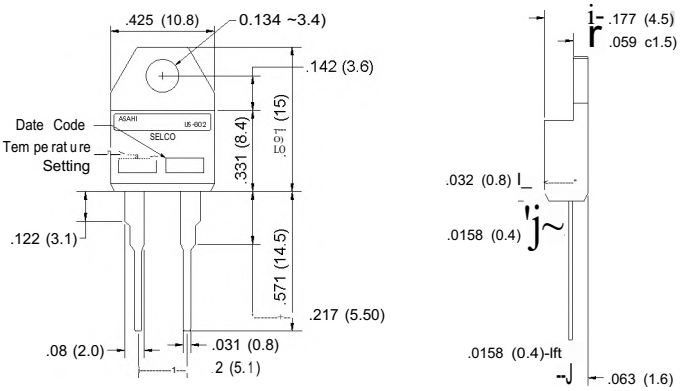
Non-Standard Gasket Material (Option)	
Code	Gasket Type/Color
5	High Seal / White

* Low Resistance - In applications where temperature rise is less than 2ºC per second

** High Resistance - In applications where temperature rise is 2ºC - 5ºC per second

It is the customer's sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

Printed Circuit Board Thermostats
802 Series



FEATURES
- Conforms to Y220/TO220 package
- Ultra compact design
- Gold plated - silver contacts

APPLICATIONS
- Computers
- Test equipment
- Power supplies

The Selco 802 Series is a miniature bimetal thermostat. This PCB unit conforms to the international Y220/TO220 package. The SPST snap-action contact is available normally open or normally closed at a factory set point range of 104ºF to 284ºF.

SPECIFICATIONS

Electrical ratings	48VDC, 1 Amp, Resistive, 30,000 Cycles 120VAC, 1 Amp, Resistive, 30,000 Cycles 5VDC, 20mA, Resistive, 100,000 Cycles
Temperature range	One fixed set point 104ºF to 248ºF (40ºC to 120ºC)
Differential	27ºF (15ºC)
Environmental temperature	284ºF (140ºC)
Dielectric strength	1,500VAC/1 minute 1,500VAC/1 minute between terminals and cover
Circuit resistance	50m Ω or less
Insulation resistance	100M Ω or more (with a 500VDC megger)
Materials	
Body housing	PBT (Polybutylene Terephtalate) UL-94 VO
Terminals	Tin plated brass
Contacts	Gold plated silver
Approvals	Temperature indicating and regulating UL873, CUL (CSA), CE UL Recognized File No. E145478(S), XAPX2 C-UL Recognzied File No. E145478(S), XAPX8 VDE File No. E-14713 RoHS Compliant

Models available from stock - subject to availability
802-F - Close On-Rise (normally open)

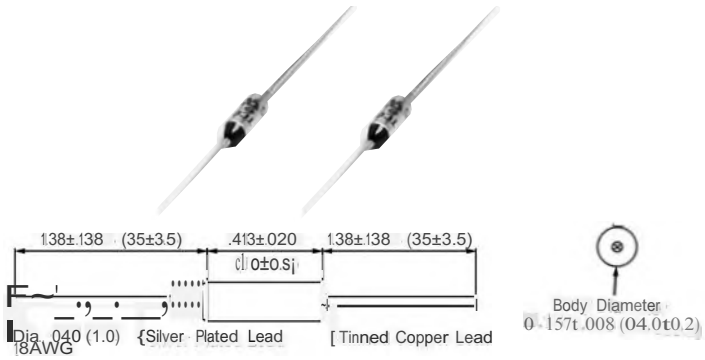
Model Number	Temperature Ranges			
	Closing		Reset	
	±9ºF	±5ºC	±12ºF	±7ºC
802F-040	104	40	77	25
802F-045	113	45	86	30
802F-050	122	50	95	35
802F-055	131	55	104	40
802F-060	140	60	113	45
802F-065	149	65	122	50
802F-070	158	70	131	55
802F-075	167	75	140	60
802F-080	176	80	149	65
802F-085	185	85	158	70
802F-090	194	90	167	75
802F-095	203	95	176	80
802F-100	212	100	185	85
802F-105	221	105	194	90
802F-110	230	110	203	95
802F-115	239	115	212	100
802F-120	248	120	221	105

Models available from stock - subject to availability
802-L - Open On-Rise (normally closed)

Model Number	Temperature Ranges			
	Opening		Reset	
	±9ºF	±5ºC	±12ºF	±7ºC
802L-040	104	40	77	25
802L-045	113	45	86	30
802L-050	122	50	95	35
802L-055	131	55	104	40
802L-060	140	60	113	45
802L-065	149	65	122	50
802L-070	158	70	131	55
802L-075	167	75	140	60
802L-080	176	80	149	65
802L-085	185	85	158	70
802L-090	194	90	167	75
802L-095	203	95	176	80
802L-100	212	100	185	85
802L-105	221	105	194	90
802L-110	230	110	203	95
802L-115	239	115	212	100
802L-120	248	120	221	105

It is the customer's sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

One Shot Thermal Cutoffs
SWTC Series



- Special lead lengths are available
- Color Band does not denote temperature group
- Stock models have 35mm ± 3.5mm lead lengths

Models available from stock - subject to availability

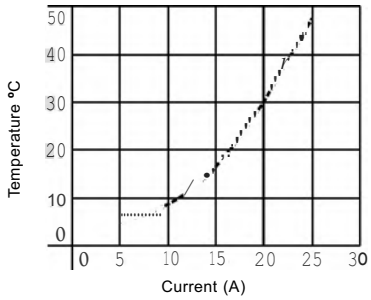
Model Number	Functioning Temperature (T_F)		Tolerance (T_F)	Holding Temperature (T_H)		UL/ cUL	VDE
	ºC	ºF		ºC	ºF		
SWTC-162-3535	72	162	A	47	117	●	●
SWTC-170-3535	77	171	A	52	126	●	●
SWTC-183-3535*	84	183	B	57	135	●	●
SWTC-194-3535*	90	194	A	65	149	●	●
SWTC-196-3535*	91	196	B	66	151	●	●
SWTC-199-3535*	93	199	B	68	154	●	●
SWTC-208-3535	98	208	A	73	163	●	●
SWTC-212-3535*	100	212	B	75	167	●	●
SWTC-228-3535*	109	228	B	84	183	●	●
SWTC-250-3535*	121	250	B	94	201	●	●
SWTC-259-3535	126	259	A	100	212	●	●
SWTC-262-3535	128	262	B	103	217	●	●
SWTC-282-3535*	139	282	A	114	237	●	●
SWTC-291-3535*	144	291	B	119	246	●	●
SWTC-306-3535	152	306	A	127	261	●	●
SWTC-333-3535	167	333	A	144	291	●	●
SWTC-336-3535	169	336	A	114	291		
SWTC-363-3535	184	363	C	159	318	●	●
SWTC-378-3535	192	378	C	162	324		
SWTC-383-3535	195	383	C	165	329	●	●
SWTC-421-3535	216	421	C	178	352	--	●
SWTC-442-3535*	228	442	C	187	369	●	●
SWTC-464-3535*	240	464	C	193	379	●	●

T_F - Functioning Temperature: Temperature at which the thermal cutoff will open + A, B or C tolerances

T_H - Hold Temperature: The maximum temperature at which a thermal cutoff can be maintained while conducting rated current for 168 hours which will not cause a change in state of the conductivity to open the circuit

-- Applied but not approved

Temperature/Current Correlation Curve



FEATURES
- Low cost
- Excellent contact rating
- Quick and easy installation

APPLICATIONS
- Motors
- Appliances
- Personal care

Thermal cutoffs are designed to provide upper limit temperature protection for many electronic products. Under normal operating temperature, the solid pellet compresses a spring which holds the star contact against the isolated lead. When a fault temperature is reached, the pellet melts and the circuit is opened permanently.

It is important to allow sufficient time to determine the proper and best location for a thermal cutoff. The location will affect the cutoff's ability to protect your product. Placing in the highest temperature area is usually best.

SPECIFICATIONS

Electrical ratings	125/250VAC, 10 Amps, Continuous Duty 125/250VAC, 15 Amps, Interrupting Current
Dual electrical ratings for continuous duty *(models listed with a *)*	125/250VAC, 10 Amps, Continuous Duty 125VAC, 15 Amps, Continuous Duty 125/250VAC, 15 Amps, Interrupting Current
Temperature tolerance	A = +0ºF/-7ºF (+0ºC/-4ºC) (refer to p/n chart) B = +0ºF/-9ºF (+0ºC/-5ºC) (refer to p/n chart) C = +0ºF/-11ºF (+0ºC/-6ºC) (refer to p/n chart)
Approvals	UL Recognized Component, CSA, VDE RoHS Compliant

*** Due to the TCO body being electrically live, Selco offers an insulation sleeve. Consult Selco for details.**

Determining The Proper Series

- **T_P** The highest temperature of the product to which a cutoff is to be attached
- **T_H** The safe temperature range for use of the cutoff
- **T_S** $T_F - T_H = T_S$
  Where TF = the functioning temperature (24ºC less than or equal to TS less than or equal to 40ºC)
- **T_D** The heating temperature caused by electrical load
- **+a**
  1. Self heating of lead wire
  2. Structure of ventilation or air tightness
  3. Location of connecting terminal
  4. Thickness of insulated covering material
  5. Best condition value, electric voltage changes considered

TP + TS + TD + a = Applicable Temperature

Installation Instructions

The performance of thermal cutoff requires proper handling during installation for it to operate in its intended manner. These instructions are intended to be used to reduce the risk of malfunction of the thermal cutoff which may result from improper installation during forming of leads, splicing, welding and soldering.

1. Bending Leads

Care should be taken when forming the Thermal Cutoff (TCO) leads. The TCO leads must be supported 1/8" from bend and epoxy. This will prevent the epoxy seal from cracking which may result in premature degradation of the pellet. A close visual inspection should be performed to make sure that the TCO leads have not been cut, nicked, folded sharply, fractured or burned.

2. Mechanical Forces During Appliance Connection

a. When installing the TCO, avoid unnecessary bending, twisting, pulling or pushing on the TCO leads. Care should be taken to avoid cracking or chipping of the epoxy, which may result from sharp twisting or bending of the lead.

b. The TCO body must maintain its cylindrical shape to function properly. Excessive clamping could cause denting or crushing of the TCO body, which may lead to failure. X-ray and visual inspection of the TCO will determine if the fuse body has been damaged.

c. Note that the TCO body is electrically live and must be insulated before applying a metal clamp over the TCO body.

d. Care should be used when pushing the epoxy end lead to avoid the lead being forced into the TCO body. This could result in a failure.

It is the customer's sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

Probe Thermostats
BPO/BPC and CPO/CPC Series

APPLICATIONS

- HVAC
- Refrigeration
- Hydraulic systems
- Motors
- Heaters
- Cooking equipment
- Diesel/Automotive engines

BPO/BPC Series

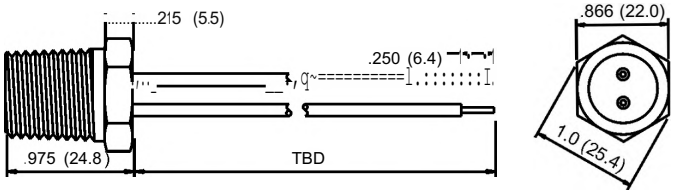
CPO/CPC Series

Selco probe thermostats are thermally sensitive bimetallic switches which when reaching a fixed factory set temperature, either opens or closes to break or make an electrical circuit. They reset automatically on cooling. Some devices can be used as controlling thermostats which cycle open and close more rapidly to maintain temperature level. Other devices can be used as over temperature protectors to limit a temperature from exceeding a predetermined value (safety device). The unit may be immersed safely in liquids under substantial pressure allowing thermostatic control to be achieved in the chemical, automotive, aerospace, HVAC, and environmental fields. Custom probe housings available, consult Selco for other models available from stock.

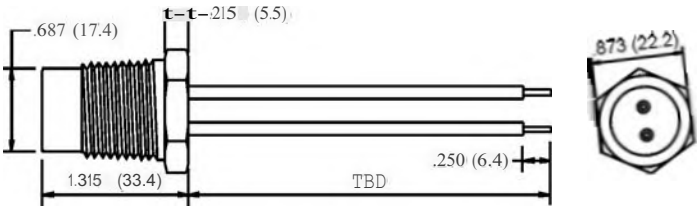
BPO/BPC and CPO/CPC Series - SPECIFICATIONS

Snap Action Models	
Electrical ratings	125VAC, 15 Amps, Resistive, 10,000 Cycles
Silver contacts	250VAC, 10 Amps, Resistive, 10,000 Cycles
	Gold contacts available
	Consult Selco for other electrical ratings
Inductive load ratings	120VAC, 5.8FLA, 34.8LRA, 6,000 Cycles 240VAC, 2.9FLA, 17.4LRA, 6,000 Cycles
Temperature range	50ºF to 200ºF (10ºC to 260ºC)
Differential	15ºF-100ºF (8ºC ± 56ºC)
Creep Action Models	
Electrical ratings	
Silver contacts	120/240VAC, 6 Amps, Resistive, 100,000 Cycles 120VAC, 5 Amps, Inductive, 100,000 Cycles
	Gold contacts available
	Consult Selco for DC applications
Temperature range	41ºF to 400ºF (5ºC to 204ºC)
Differential	None - creep-action
Tolerance	±9ºF (±5ºC)
Insulation resistance	100M Ω or more (with a 500VDC megger)
Circuit resistance	50m Ω or less (initial value)
Dielectric strength	1500VAC/1 minute
Pressure rating	Consult Selco
Materials	
Body & tube	Brass or stainless steel
Headfill	Epoxy filled
Contacts	Silver or gold
Wire	18AWG, UL3173, Black 18AWG, UL1015, Black Other lead options available

BPO/BPC Series



CPO/CPC Series



Special Model Designations for BPO/BPC and CPO/CPC Series

Style No.	Thread NPT	2-Pipe Thread NPT	Tube Length (inches)	Material
P11	1/2	-	0.35	stainless
P12	1/2	-	0.625	stainless
P13	1/2	1/4	0.5	brass
P14	1/2	-	0.625	brass
P17	1/2	-	-	brass
P18	1/2 x 1/4	-	1.5	stainless

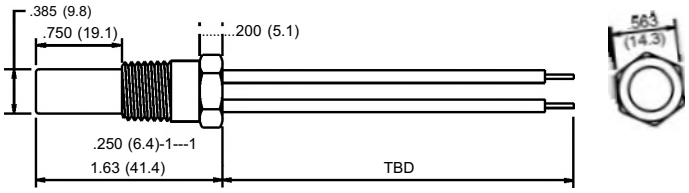
It is the customer's sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

SIC/SIO Series

SIC/SIO Series - SPECIFICATIONS

Creep Action	
Electrical ratings	120/240VAC, 6 Amps, Resistive, 100,000 Cycles
Silver contacts	120VAC, 5 Amps, Inductive, 100,000 Cycles
	Gold contacts available
	Consult Selco for DC applications
Temperature range	41ºF to 400ºF (5ºC to 204ºC)
Differential	None - creep-action
Tolerance	±9ºF (±5ºC)
	Consult Selco for special tolerances
Snap Action	
Electrical ratings	125VAC, 4 Amps, Resistive, 10,000 Cycles
Silver contacts	250VAC, 2.5 Amps, Resistive, 10,000 Cycles
	Gold contacts available
	Consult Selco for other electrical ratings
Temperature range	131ºF to 302ºF (55ºC to 150ºC)
Differential	50ºF ± 25ºF (30ºC ± 15ºC)
Tolerance	±9ºF (±5ºC)
Pressure rating	Consult Selco
Materials	
Body & tube	Brass or stainless steel - 1/4" NPT, 3/8" NPT
Headfill	Epoxy filled
Contacts	Silver or gold
Wire	18AWG, UL3173, Black 18AWG, UL1015, Black Other lead options available

SIC/SIO Series



Special Model Designations for SIC/SIO Series

Style No.	Thread NPT	2-Pipe Thread NPT	Tube Length (inches)	Material
P01	1/4	-	0.75	brass
P02	3/8	-	1	brass
P04	1/4	-	2	stainless
P05	1/2 x 1/4	-	1.25	brass
P06	1/4	-	0.636	stainless
P20	3/8	-	1	stainless
P21	1/4	-	1	stainless

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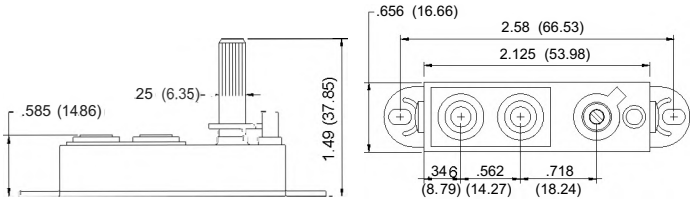
Fixed or Adjustable Thermostats
S200A & S200-F-1 Series

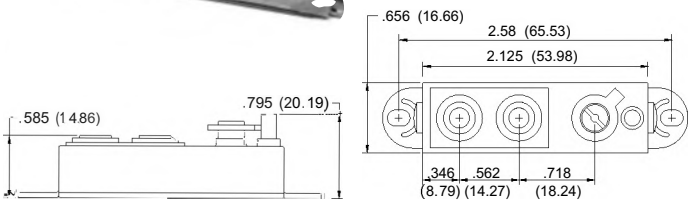
Model S200-A

Control knob sold separately
Knob part number:
S150-250 (no line)
S151-250 (with line)

Cap part number:
C150 (no line)
C151 (with line)



Model S200-F-1



FEATURES
- Rapid response
- Precision control
- Custom calibration
- Minimum overshoot
- Custom shaft lengths

APPLICATIONS
- Heaters
- Medical
- Hot plates
- Industrial melters
- Soldering equipment

The S200 Series thermostats have a base plate with a high coefficient of expansion. A spring of low-expansion alloy is welded at each end of the base plate. When the base plate is heated it expands and the alloy spring moves in a downward direction allowing the large silver contacts to open. Often referred to as “expanding-action thermostats,” they are mounted directly on a heated surface and are ideally suited to a number of commercial applications. Selco carries a line of durable, easy-grip control knobs for use with adjustable models. Model S200-F-1 is available with fixed set points.

SPECIFICATIONS

Electrical ratings	120/240VAC, 1600 watts maximum 100,000 Cycles
Temperature range	75ºF to 600ºF (23ºC to 315ºC)
Sensitivity	Approximate 2ºF
Case width	11/16”
Overall length	2-7/8”
Approvals	UL Recognized File No. E79570(M) CSA File. LR-50152-2

Models available from stock - subject to availability

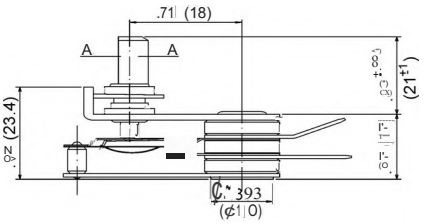
Model Number	Temperature Range Minimum - Maximum	Overall Height	** Adjustment
S200-A	Room Temperature - 525ºF ± 20ºF	1.50”	2ºF for every 1º angular rotation
S200-A-1008	Room Temperature - 550ºF ± 25ºF	2.00”	2ºF for every 1º angular rotation
S200-A-1325	Room Temperature - 425ºF ± 20ºF	1.75”	2ºF for every 1º angular rotation
S200-A-4051	Room Temperature - 205ºF ± 10ºF	1.43”	2ºF for every 1º angular rotation
S200-F-1	Room Temperature - 575ºF ± 25ºF	.795”	2ºF for every 1º angular rotation

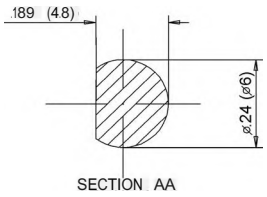
* Temperature calibration service is available - consult Selco for details
** Turn clockwise to increase temperature setting

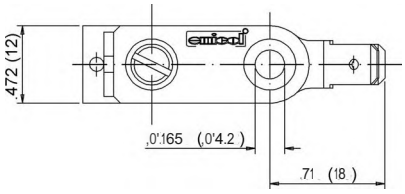
It is the customer’s sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

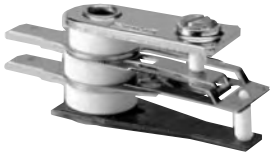
Adjustable Thermostats
TL Series

TL 01 Model
Adjustable Thermostat

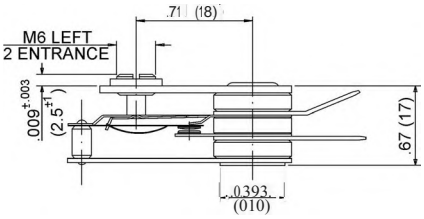


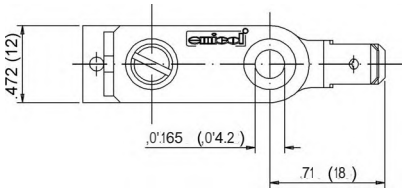






TL 02 Model
Fixed Thermostat





FEATURES
- Low cost
- Creep action
- Custom design

APPLICATIONS
- Grills
- Irons
- Fryers

These bimetal thermostats are available in adjustable or fixed settings. The position of the adjustment shaft determines the desired temperature. Contacts are “snap-action” which extends the electrical life or “creep-action” which carry no built in differential. They are primarily used in irons, grills, small electric ovens, as well as commercial and industrial heating devices.

SPECIFICATIONS

Electrical ratings	250VAC, 10 Amps, Resistive, 60Hz 100,000 Cycles
Temperature range	212ºF to 410ºF (100ºC to 210ºC) 410ºF to 518ºF (210ºC to 270ºC) Tolerance 5% or 10ºF (whatever is greater)
Dielectric strength	1500VAC/1 minute
Approvals	UL Recognized File No. E145478(S), XAPX2 C-UL Recognized File No. E145478, XAPX8 VDE RoHS Compliant

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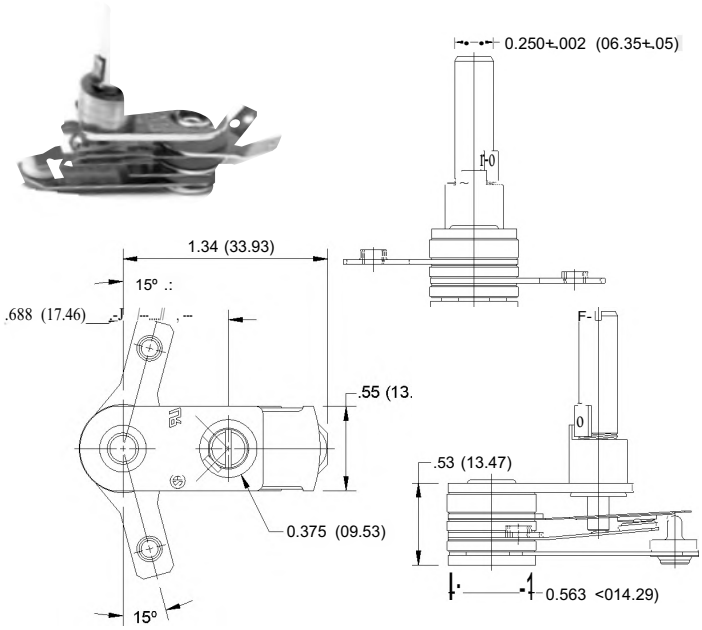
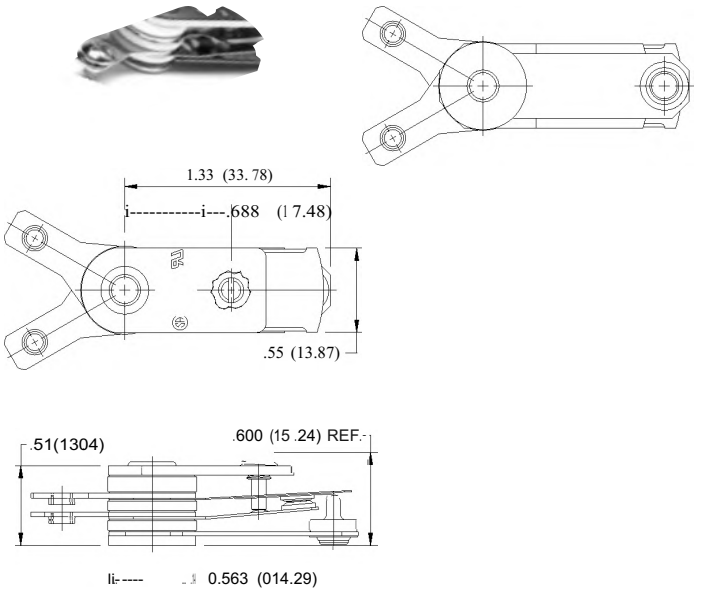
Adjustable Thermostats
TOR Series

TOR Model - Adjustable Thermostat



TOR Model - Fixed Thermostat



FEATURES
- Low cost
- Creep action
- Custom design

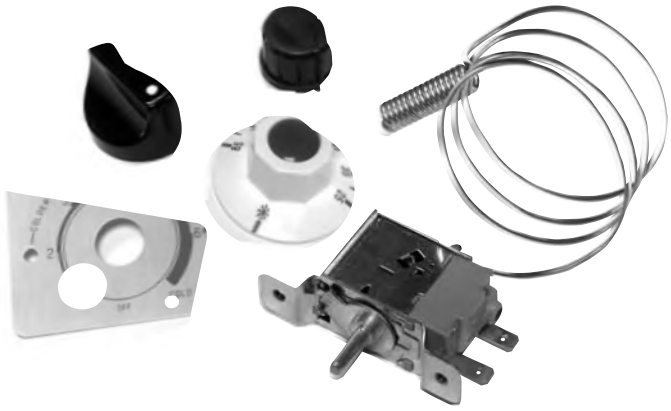
APPLICATIONS
- Grills
- Irons
- Fryers

These bimetal thermostats are available in adjustable or fixed settings. The position of the adjustment shaft determines the desired temperature. Contacts are “snap-action” which extends the electrical life or “creep-action” which carry no built in differential. They are primarily used in irons, grills, small electric ovens, as well as commercial and industrial heating devices.

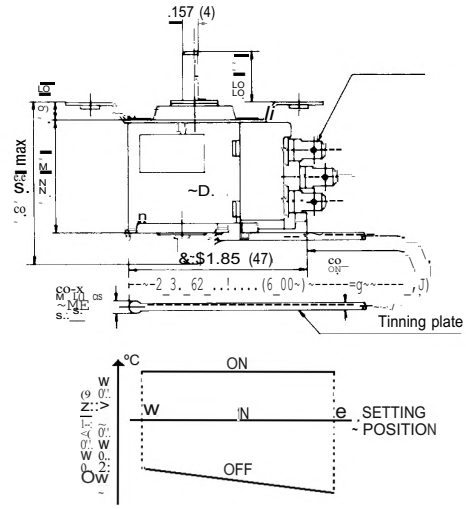
SPECIFICATIONS

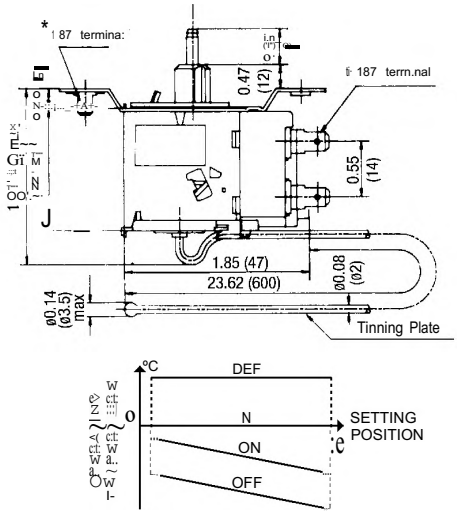
TOR Models

Electrical ratings	120VAC, 15 Amps, Resistive, 2.6FLA, 15.6LRA 240VAC, 10 Amps, Resistive, 1.3FLA, 7.8LRA 100,000 Cycles
Temperature range	0ºF to 550ºF (-17ºC to 287ºC) 450ºF maximum for snap action contacts 550ºF maximum for creep action contacts Tolerance ±5% of the calibration temperature or 10ºF whatever is greater
Dielectric strength	1800VAC/1 second
Approvals	UL Recognized File No. E170601, XAPX2 C-UL Recognized File No. E170601, XAPX8 RoHS Compliant



APPLICATIONS
- Refrigerators





WD Series - Constant Cut-in Thermostat

The WD Series provides Forced ON or Forced OFF and automatic cycle defrosting in refrigeration systems. Cut-in temperature varies at each cam position, but defrosting temperature remains the same. It is used as a component of controlling in 2-door and 2-temperature refrigerators and freezers. Mainly built to custom specifications, it comes complete with a variety of mounting hardware, including brackets, terminals, dial plates and knobs.

SPECIFICATIONS	
Temperature range	ON: +37ºF to 43ºF (3ºC to 6ºC) OFF: -22ºF to 24ºF (-30ºC to -4ºC)
Maximum temperature range	66ºF (19ºC)
Differential	14ºF to 64ºF (8ºC to 36ºC)
Contact resistance	<50m Ω
Insulation resistance	>100m Ω
Dielectric strength	AC 50/60Hz, 1500V/1 minute
UL/CSA electrical ratings	125VAC, 8 Amps, Resistive 250VAC, 5 Amps, Resistive
Inductive load ratings	125VAC, 6FLA, 36LRA 250VAC, 4FLA, 24LRA
VDE electrical ratings	250VAC, 5 Amps
Approvals	UL Recognized File No. E195847, SDFY2 C-UL Recognized File No. E195847, SDFY8, VDE, SEMKO RoHS Compliant

WS Series - Push Button Defrost Thermostat

The WS Series has a combined function of refrigerator cycling control and manual defrosting with a push button shaft in the center of the adjusting shaft. Defrost starts when the push button is pressed, and it terminates automatically as temperature rises to a pre-set point. Then the unit continues its normal running cycle.

SPECIFICATIONS	
Temperature range	-18ºF to 45ºF (-28ºC to 7ºC)
Maximum temperature range	32ºF (18ºC)
Differential	12ºF to 25ºF (6ºC to 14ºC)
Defrost reset temperature	6ºF to 12ºF (3ºC to 7ºC)
Contact resistance	<50m Ω
Insulation resistance	>100M Ω
Dielectric strength	AC 50/60Hz, 1500V/1 minute
VDE electrical ratings	250VAC, 5 Amps
Shift of defrosting shaft	3.7 ± 5mm
Approvals	RoHS Compliant

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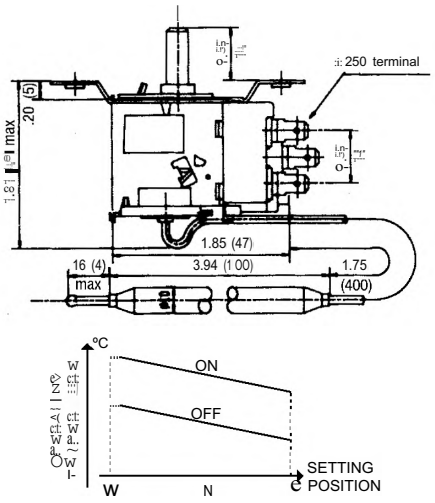
Cold Capillary Controls
WK and WK-H Series



Models available from stock - subject to availability

Part Number	Temperature Settings			
	Switch Action	Cold °F	Normal °F	Warm °F
WK1V-115-020	ON	●	42	45
	OFF	34	37	●
WKF29.4S-005-120	ON	-5.8	5	12.2
	OFF	-20.2	-9.4	-2.2
WKF20.6E-007-020	ON	3	21	41
	OFF	4	16	33
WKF11V-109-021T	ON	35	●	46
	OFF	13	●	●
WKF1V-005-020-1	ON	38	●	43
	OFF	30	●	●
WKF11A-102-022 (Constant Cut-In)	ON	39	39	39
	OFF	12	21	30
WK15.6S-408-060	ON	64.4	●	90
	OFF	60.08	●	●

APPLICATIONS

- Coolers
- Freezers
- Refrigerators
- Ice machines
- Air conditioners

The WK and WK-H Series general purpose thermostats provide the ideal temperature control solution for a wide variety of refrigeration and air-conditioner applications. This cold control provides accurate temperature control and high sensitivity for a wide range of refrigerators, freezers, beverage coolers, and display case applications. High current capability switch of SPST or SPDT. There is a narrow differential and a forced off function. THe WK and WK-H Series can be used in DC current with inductive loads. Fixed operating temperatures (without shaft) ar also available. With universal adaptability in mind, the WK and WK-H Series is designed to replace many OEM controls, offering the user additional options and convenience during equipment manufacturing or repair. Mainly built to custom specifications, it comes complete with a variety of mounting hardware including brackets, terminals, dial plates, and knobs.

SPECIFICATIONS

Temperature range	-31ºF to 104ºF (-35ºC to 40ºC) with bulb -31ºF to 90ºF (-35ºC to 32ºC) no bulb
Maximum temperature range	36ºF (20ºC)
Differential	4ºF to 9ºF (2ºC to 5ºC)
Tolerance	2.7ºF (1.5ºC) at calibration point 3.6ºF (2.0ºC) at non-calibration point
Contact resistance	<50m Ω
Insulation resistance	>100m Ω
Dielectric strength	AC 50/60Hz, 1500V/1 minute
UL/CSA/VDE electrical ratings *Model WK*	125/250VAC, 20 Amps, Resistive 100,000 Cycles
Inductive load ratings	125/250VAC, 20FLA, 80LRA
UL/CSA/VDE electrical ratings *Model WK-H*	125/250VAC, 20 Amps, Resistive 100,000 Cycles
Inductive load ratings	125/250VAC, 25FLA, 100LRA
Approvals	UL Recognized File No. E195847, SDFY2 C-UL Recognized File No. E195847, SDFY8 VDE RoHS Compliant

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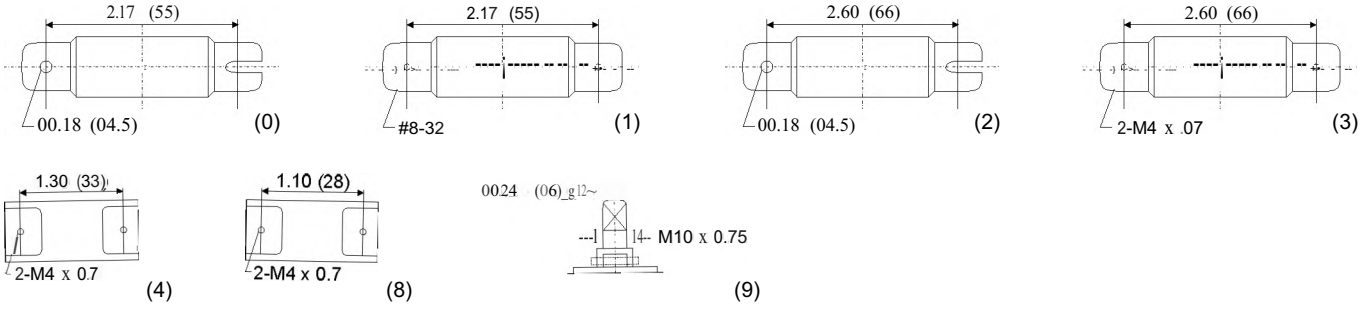
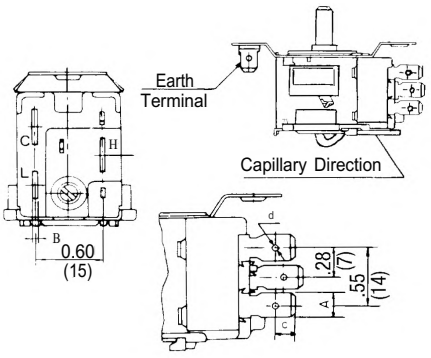
Brackets, Terminals and Adjustment Shafts

Options for WD, WS, WK and WK-H Series

Bracket Options



Terminal Options

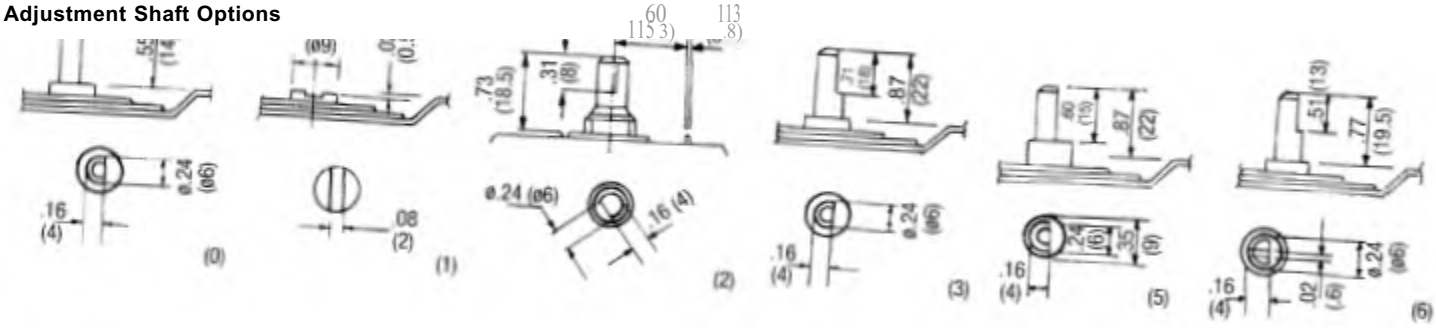


Terminal Number	A x B (mm)	C (mm)	D (inches)	Code	
				Terminal	Ground Terminal
#187	4.75 x 0.55	3.2 + 0.25	1.4	1 or 5	1 or 3
#250	4.75 x 0.8	4.2 + 0.3	1.4	3 or 7	5 or 7
#187	6.35 x 0.8	3.2 + 0.25	1.6	2 or 6	2 or 4

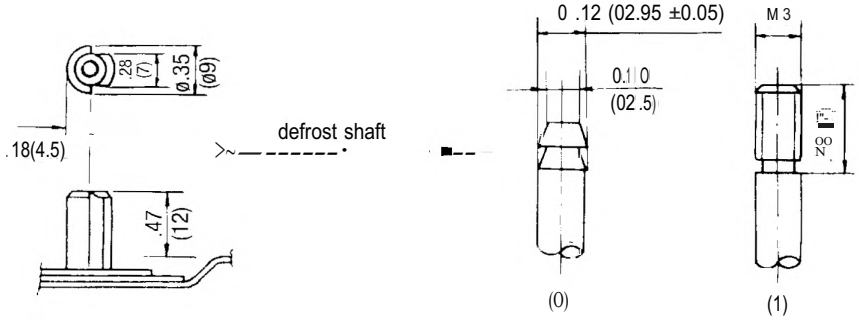
Terminal No. 1, 2, and 3 - are the same direction as capillary
Terminal No. 5, 6, and 7 - are the opposite direction

Ground Terminal No. 1, 2, and 5 - are in the front of the bracket
Ground Terminal No. 3, 4, and 7 - are in the rear of the bracket

Adjustment Shaft Options



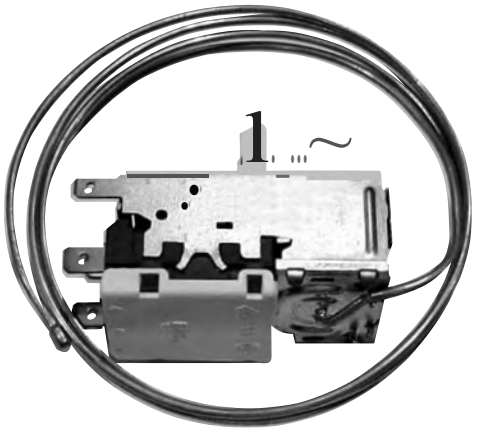
For WS Series

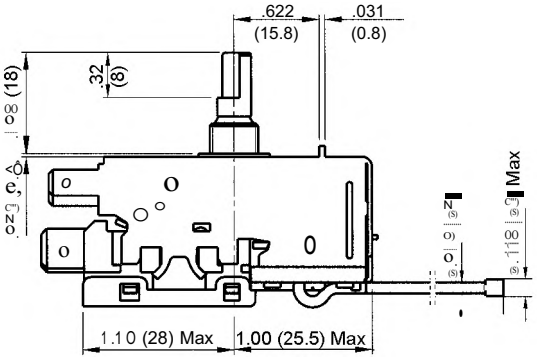


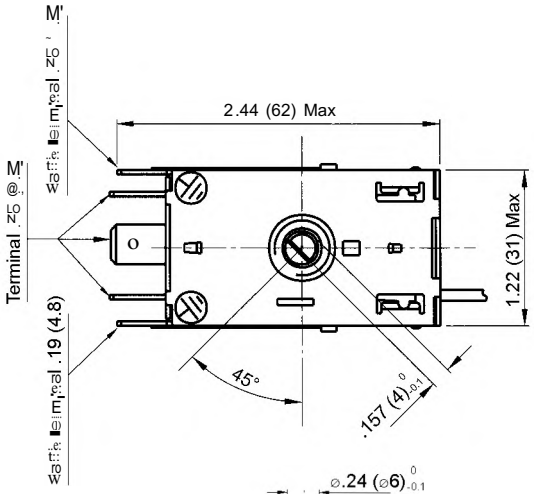
It is the customer's sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

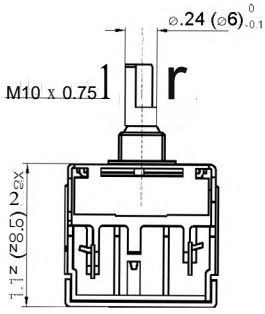
Cold Capillary Controls

KD Series - Control with S.P.S.T. Switch and Auxiliary Switch









APPLICATIONS

- Refrigerators

Temperature control with S.P.S.T. switch and auxiliary switch for OFF position. Automatic defrost function by constant cut-in value.

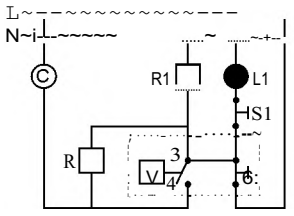
Terminal 3-4: Closes on temperature rise

Terminal 3-6: Opens in OFF position

SPECIFICATIONS

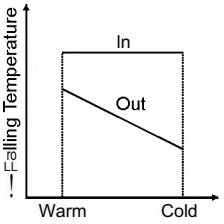
Electrical ratings	250V, 6 Amps, 50Hz
Inductive load ratings	250V, 6FLA, 36LRA 120V, 10FLA, 40LRA
Temperature range	-25ºF to 42ºF (-32ºC to 6ºC)
Adjustment range	4 to 18K
Tolerance	2.7ºF (1.5ºC) at calibration point 3.6ºF (2.0ºC) at non-calibration point
Contact resistance	<50m Ω
Insulation resistance	>100M Ω
Dielectric strength	AC 50/60Hz, 1500V/1 minute
Approvals	UL and C-UL Recognized VDE

Typical Electrical Wiring Diagram



3-4 Main switch closes at temperature rise
3-6 Auxiliary switch opens in OFF position
C Compressor
R Defrost heater
R1 Frame heating
R2 Internal heating resistor (82k ohms)
L Lamp
S1 Door switch

Typical Function Chart



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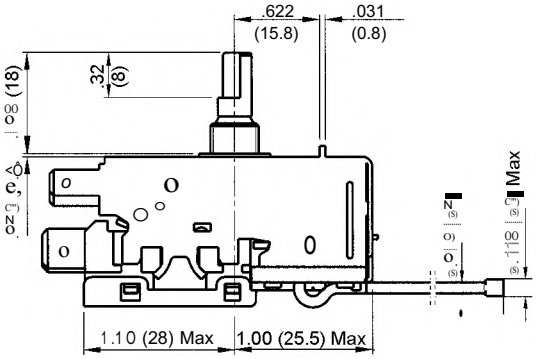
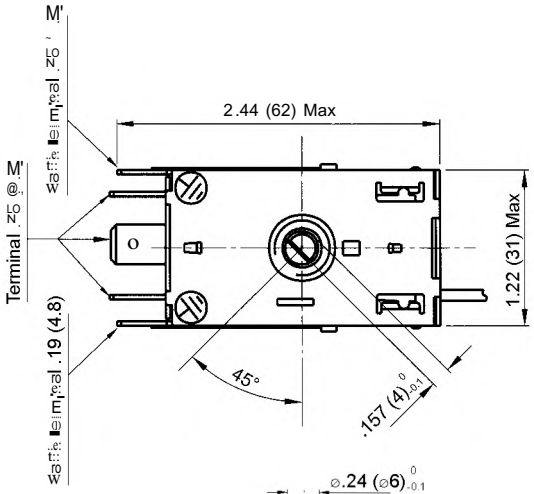
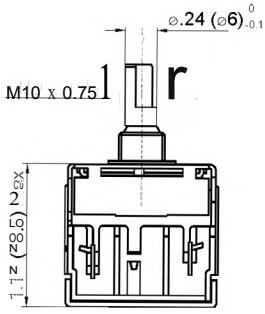






APPLICATIONS
- Automotive air conditioning
- Refrigerating/freezing devices

Temperature control with S.P.S.T. switch.

Terminal 3-4: Closes on temperature rise
In general, Type KP is classified into 2 basic versions:

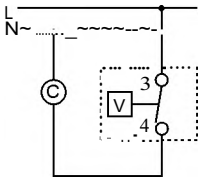
Version A: KP with standard switching differential

Version B: KP with wide switching differential

SPECIFICATIONS

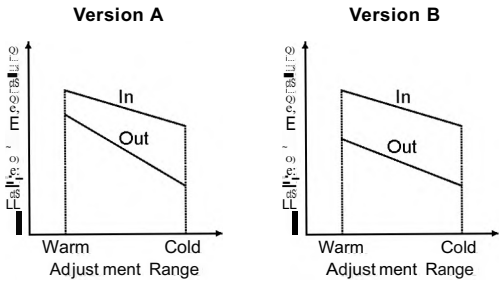
Electrical ratings	250V, 6 Amps, 50Hz
Inductive load ratings	250V, 6FLA, 36LRA 120V, 10FLA, 40LRA
Temperature range	-40ºF to 104ºF (-40ºC to 40ºC)
Adjustment range	Version A: 4 to 30K Version B: 5 to 15K
Differential	Version A: 3 to 14K Version B: 10 to 25K
Tolerance	2.7ºF (1.5ºC) at calibration point 3.6ºF (2.0ºC) at non-calibration point
Contact resistance	<50m Ω
Insulation resistance	>100M Ω
Dielectric strength	AC 50/60Hz, 1500V/1 minute
Approvals	UL and C-UL Recognized VDE

Typical Electrical Wiring Diagram



3-4 Main switch closes at temperature rise
C Compressor

Typical Function Chart



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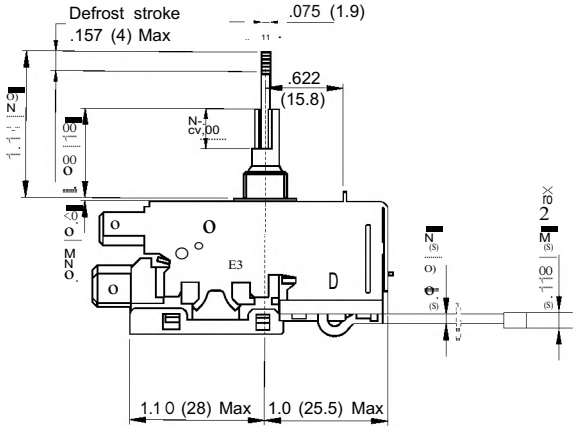
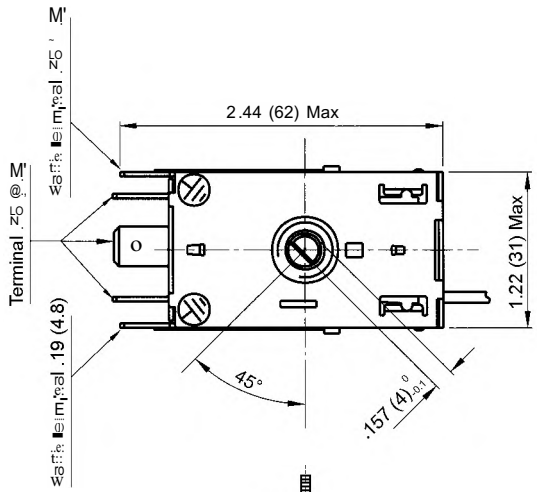
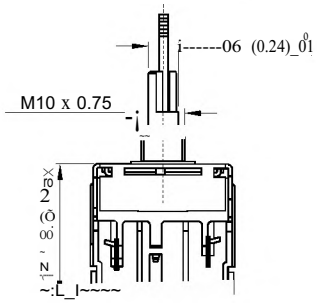






APPLICATIONS

- Automotive air conditioning
- Refrigerating/freezing devices

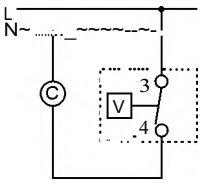
Closing with rising temperature and possibility to manually initiate a defrost function is achieved by pressing the defrost pin (stroke approximate .157 (4mm)) until latching. By doing this, the main switch is opened and locked until the defrost temperature is reached at the sensing point of the capillary which is normally fixed at the evaporator. After the defrost temperature has been reached, the pressure pin returns to its OFF position and the normal ON/OFF operation of the temperature control is reset. Defrost function can be initiated in any position of the dial shaft. If initiated in error, the defrost function can be cancelled by turning the dial shaft to the OFF position.

Terminal 3-4: Closes on temperature rise

SPECIFICATIONS

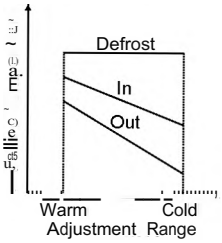
Electrical ratings	250V, 6 Amps, 50Hz
Inductive load ratings	250V, 6FLA, 36LRA 120V, 10FLA, 40LRA
Temperature range	-40ºF to 104ºF (-40ºC to 40ºC)
Adjustment range	4 to 14K
Differential	4 to 14K
Defrost temperature	Possible between 2ºC and 10ºC Differential of defrost temperature to WARM-IN minimum 4K
Tolerance	2.7ºF (1.5ºC) at calibration point 3.6ºF (2.0ºC) at non-calibration point 4.5ºF (2.5ºC) at defrost
Contact resistance	<50m Ω
Insulation resistance	>100M Ω
Dielectric strength	AC 50/60Hz, 1500V/1 minute
Approvals	UL and C-UL Recognized VDE

Typical Electrical Wiring Diagram



3-4 Main switch closes at temperature rise
C Compressor

Typical Function Chart



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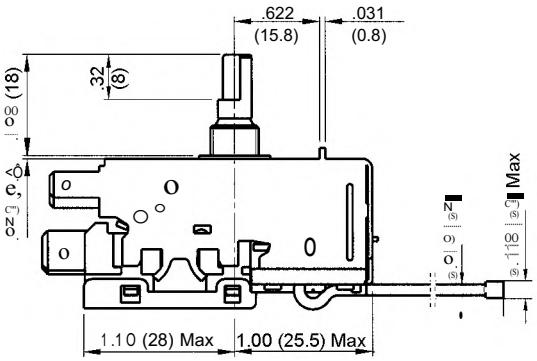
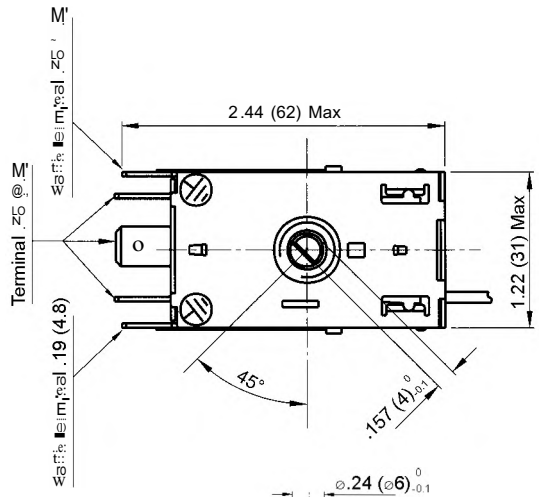
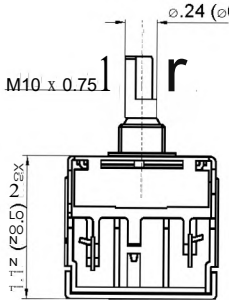






APPLICATIONS

- Freezers

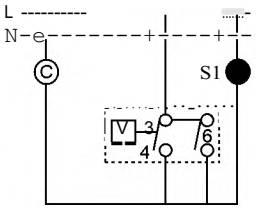
Terminal 3-4: Closes on temperature rise

Terminal 3-6: Closes when warning temperature has been reached

SPECIFICATIONS

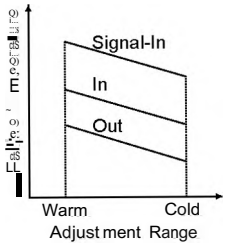
Electrical ratings	250V, 50Hz Terminal 3-4: 6 Amps Terminal 3-6: 0.1 Amps
Temperature range	-40ºF to 104ºF (-40ºC to 40ºC)
Adjustment range	4 to 30K
Differential	3 to 14K
Signal differential	4 to 7K
Tolerance	2.7ºF (1.5ºC) at calibration point 3.6ºF (2.0ºC) at non-calibration point
Contact resistance	<50m Ω
Insulation resistance	>100M Ω
Dielectric strength	AC 50/60Hz, 1500V/1 minute
Approvals	UL and C-UL Recognized VDE

Typical Electrical Wiring Diagram



3-4 Main switch closes at temperature rise
3-6 Signal switch closes at temperature rise
C Compressor
S1 Warning lamp indicates to high temperature

Typical Function Chart



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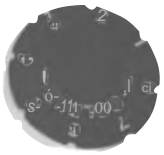
Cold Capillary Controls - Accessories

Brackets, Terminals, Dial Plates and Knobs

WXN005

WKP003

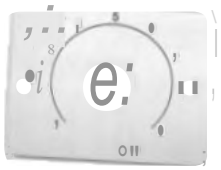


WKP004

WKP005

KP002

KP006



KP007

WKB001

XN001A

XN001

WAN002

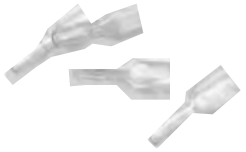
WXN002B

WZJ001

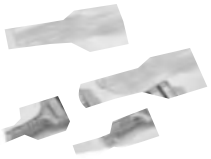
WWZ001

JD702

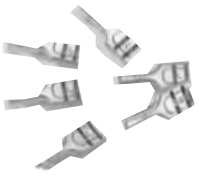
WLD001



BT001



BT001 JT002



JT001

WDJ001

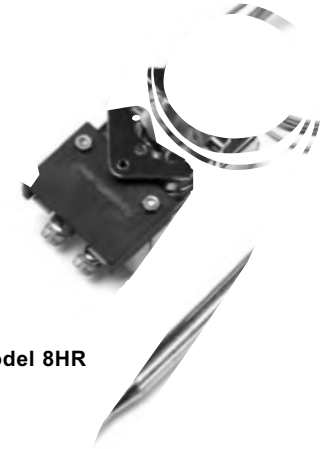
WLD007

WLD008

It is the customer's sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

Bulb & Capillary Thermostats
8HQ, 8HR and 8HW Series

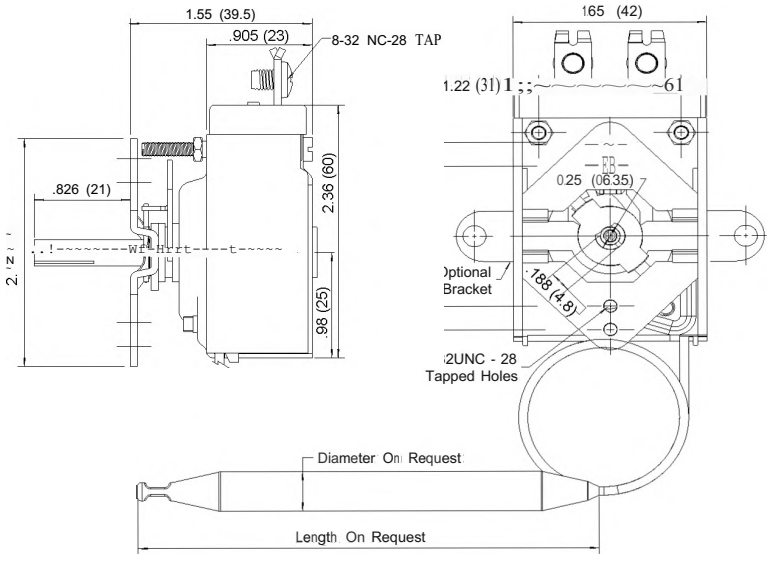
Model 8HQ



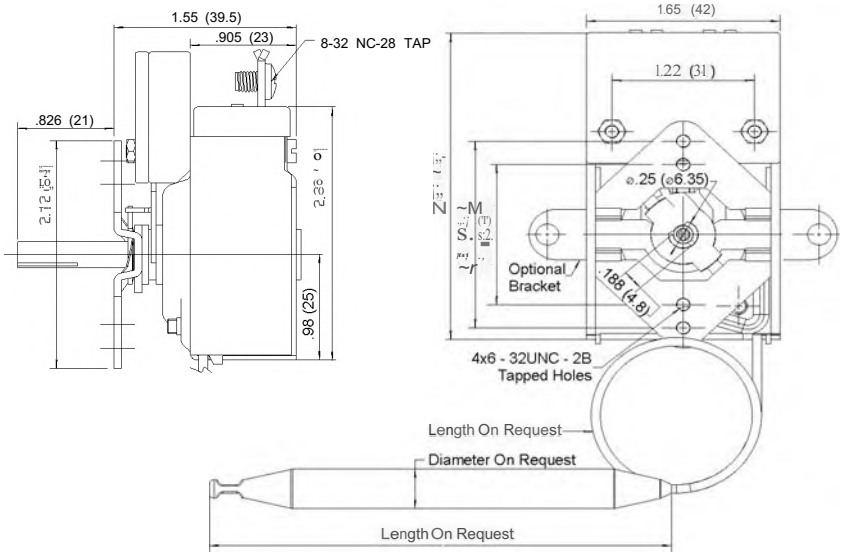
Model 8HR

Model 8HQ - S.P.S.T. - Normally closed (open on temp. rise)

Model 8HW - with positive off



Model 8HR (shown above) **-** Auxiliary contact - 30 Amps, 250 Volts



FEATURES
- 30 Amps capacity
- Drop in replacement
- Custom configurations

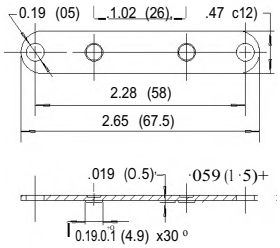
APPLICATIONS
- Electric heaters
- Cooking equipment
- Commercial food eqpt.

These 30-Amp Bulb and Capillary Thermostats are designed to be a direct replacement for many different controls. This series (8HQ, 8HR, 8JQ, and 8JW) are electro-mechanical on/off switches that are activated by temperature. They are commercial electric thermostats that are SPST or DPST. Fixed or adjustable temperatures with or without auxiliary switches and/or pilot-duty ratings are available on special order. The 8JW and 8HQ models include a mechanical "positive off" feature in the dial "off" position. A variety of control knobs and bezels are available upon request.

SPECIFICATIONS

Temperature range	-4ºF to 608ºF (-20ºC to 320ºC)
Electrical ratings	120/240VAC, 30 Amps, Resistive 100,000 Cycles
Material options	Copper, stainless steel, nickel plated
Options can include	Compression fittings for mounting, gold contacts, .250 quick connects, customer markings, angular rotations, shaft lengths, back fixing plate bracket (2 holes .5mm dia., 58mm distance), plastic coating to prevent against moisture and dust
Model variations	
8HQ	S.P.S.T. Normally closed (open on temperature rise)
8HW	S.P.S.T. Normally closed (open on temperature rise) Positive off
8HR	Auxiliary contact - 30 Amp, 250 Volt Available on request with 10-32 screw terminals
8JQ	D.P.S.T. - Double pole Normally closed (open on temperature rise) 2 x 30 Amp, 250 Volt
8JW	D.P.S.T. - Double pole Normally closed (open on temperature rise) 2 x 30 Amp, 250 Volt Positive off switch available on request

Optional bracket for all 30-Amp Models



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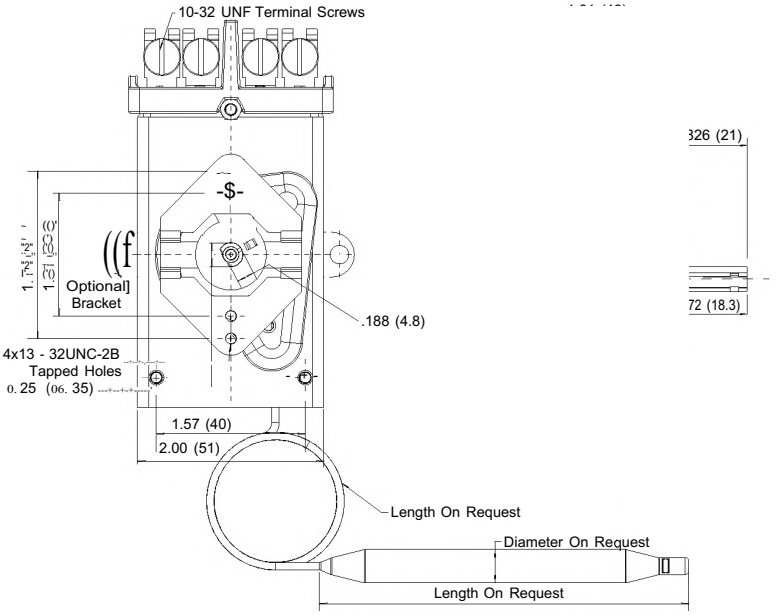
Model 8JQ

Model 8JQ

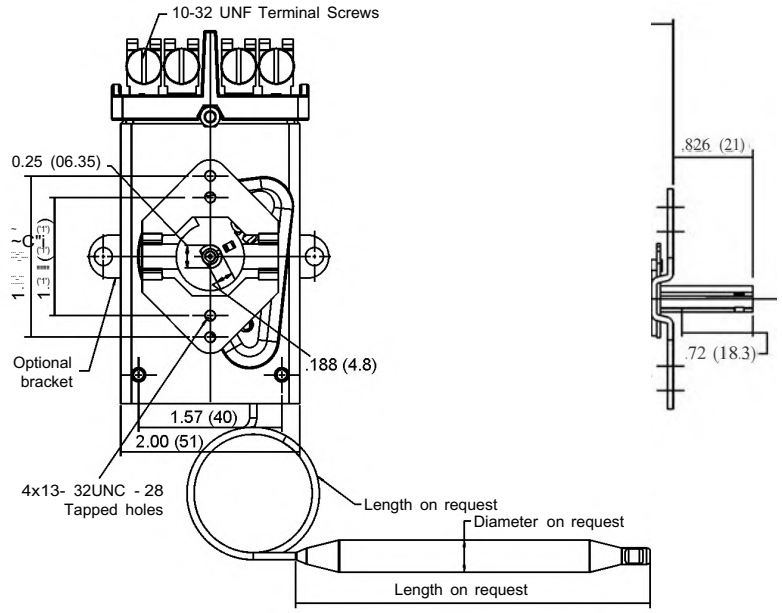
D.P.S.T. - Normally closed, open on temperature rise
2 x 30 Amps, 250 Volts



Model 8JW

Model 8JW

D.P.S.T. - Normally closed (open on temperature rise) with positive off
2 x 30 Amps, 250 Volts - Positive off switch available upon request



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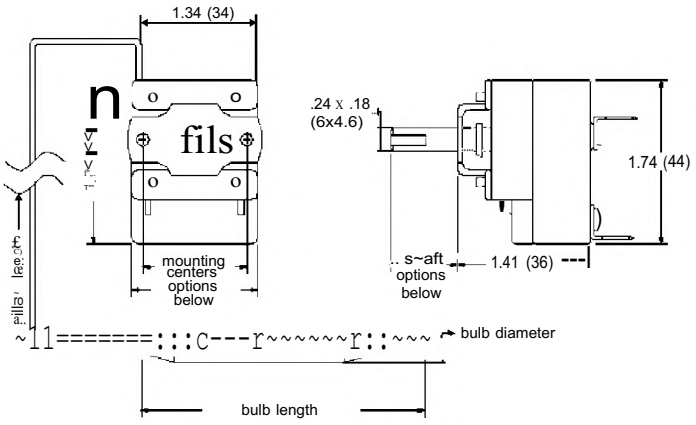
Bulb & Capillary Thermostats

CAP Series - Automatic Reset



Shaft Length Shaft diameter ⌀24 (⌀6) x .18 (4.6)		Mounting Bracket Center Holes	
inches	mm	inches	mm
0.52	13	1.1	28/M4 thread
0.71	18	1.3	33/6-32 thread
0.87	22	1.7	44/6-32 thread
●	●	●	●

FEATURES

- Stock models
- 20 Amps capacity
- All agency approvals

APPLICATIONS

- Heaters
- Test systems
- Food service equipment

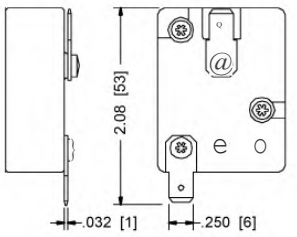
Selco's bulb and capillary thermostats have a fluid filled bulb. When temperature rises, the bulb fluid expands via a capillary tube to an expandable diaphragm within the remote thermostat set point. The thermostats are compact and have ceramic bodies. Accessories include knobs and dials that allow selection of the temperature set point.

SPECIFICATIONS

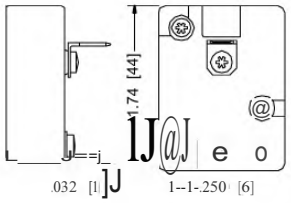
Temperature range	32ºF to 752ºF (0ºC to 400ºC)
UL electrical ratings	120/240VAC, 20 Amps, Resistive, 100,000 Cycles 120VAC, 5 Amps, Inductive, 100,000 Cycles 240VAC, 2.9 Amps, Inductive, 100,000 Cycles 1/4 Horsepower, 100,000 Cycles 125VA (pilot duty), 100,000 Cycles
VDE electrical ratings	250VAC, 5 Amps, Inductive 400VAC, 1 Amp, Inductive 10,000 Cycles
Options can include	Compression fittings for mounting, screw terminals, quick connects, gold contacts, SPDT, earth terminals, dial layouts, plastic coating to prevent moisture
Approvals	UL Recognized File No. E168164(S), XAPX2 C-UL Recognized File No. E168164(S), XAPX8 E.C. Declaration of Conformity RoHS Compliant
European	VDE, SEMKO, KEMA

Terminal Options

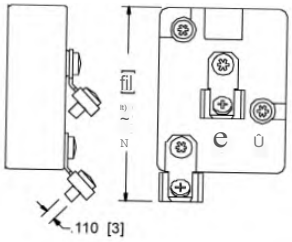
Horizontal



Vertical



Screw (#8-32 or 4mm)



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It is the customer's sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements

Bulb & Capillary Thermostats

CAP Series - Automatic Reset

Models available from stock - subject to availability

Model Number	Temperature Range (ºF)	Set Point	Switch	Material	Capillary Length (inches)	Bulb Length (inches)	Bulb Diameter (inches)
CAP-40-105-R	40-105	Adjustable	SPST	Copper	60	6.0	.24
CAP-56-120-R	56-120	Adjustable	SPST	Stainless Steel	60	7.0	.20
CAP-57-104	57-104	Adjustable	SPST	Copper	43	4.7	.250
CAP-60-150-SS	60-150	Adjustable	SPST	Stainless Steel	16	4.5	.19
CAP-60-450	60-450	Adjustable	SPST	Stainless Steel	36	3.0	.20
CAP-75-140-R	75-140	Adjustable	SPST	Stainless Steel	36	7	.20
CAP-85-195	85-195	Adjustable	SPST	Copper	36	3.6	.24
CAP-85-230-R	85-230	Adjustable	SPST	Copper	36	3.3	.24
CAP-100-320	100-320	Adjustable	SPST	Stainless Steel	36	4.5	.19
CAP-120-392-1	120-392	Adjustable	SPDT	Stainless Steel	36	4.8	.19
CAP-120-428	120-428	Adjustable	SPST	Copper	36	5.1	.20
CAP-120-570	120-570	Adjustable	SPST	Copper	36	3.5	.20
CAP-122-482	122-482	Adjustable	SPST	Copper	36	3.6	.20
CAP-140-475	140-475	Adjustable	SPST	Copper	21	4.9	.20
CAP-140-752	140-752	Adjustable	SPST	Stainless Steel	17	6.2	.118
CAP-150-285	150-285	Adjustable	SPST	Copper	36	4.7	.250
CAP-176-400	176-400	Adjustable	SPST	Copper	47	4.6	.24

Standard Temperature Ranges	Tolerance	Differential
4-40ºC (40-104ºF)	±2ºC (±3.6ºF)	1.5º±1C (2.7º±1.8ºF)
30-90ºC (85-195ºF)	±3ºC (±5.4ºF)	4º±2ºC (7.2º±3.6ºF)
30-110ºC (85-230ºF)	±4ºC (±7.2ºF)	4º±2ºC (7.2º±3.6ºF)
50-200ºC (122-392ºF)	±8ºC (±14.4ºF)	7º±4ºC (12.6º±7.2ºF)
50-220ºC (122-428ºF)	±8ºC (±14.4ºF)	7º±4ºC (12.6º±7.2ºF)
50-250ºC (122-482ºF)	±9ºC (±16.2ºF)	7º±4ºC (12.6º±7.2ºF)
50-300ºC (122-570ºF)	±9ºC (±16.2ºF)	7º±4ºC (12.6º±7.2ºF)
60-400ºC (140-752ºF)	±12ºC (±21.6ºF)	9º±4ºC (16.2º±7.2ºF)

Shaft Length Shaft diameter ø24 (6) x .18 (4.6)		Mounting Bracket Center Holes	
inches	mm	inches	mm
0.52	13	1.1	28/M4 thread
0.71	18	1.3	33/6-32 thread
0.87	22	1.7	44/6-32 thread
-	-	●	●

Standard Mechanical Specifications

Temperature Ranges		Max. Ambient Exposure of Thermostat Case		Max. Working Temperature of the Bulb		Diameter of Copper Bulb				Diameter of Stainless Steel Bulb				Capillary Length	
						Length		Diameter		Length		Diameter			
ºF	ºC	ºF	ºC	ºF	ºC	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
140-752	60-400	302	150	752	400	●	●	●	●	6.3	160	.12	3	35.4	900
120-570	50-300	302	150	600	315	9.6	245	0.12	3.1	7.6	195	.12	3	35.4	900
120-570	50-300	302	150	600	315	6	152	0.15	4	●	●	●	●	35.4	900
120-570	50-300	302	150	600	315	3.4	87	0.19	5	3	76	.19	5	35.4	900
120-428	50-220	302	150	448	231	5	127	0.19	5	4	100	.19	5	35.4	900
120-392	50-200	302	150	410	210	3.7	96	0.24	6	4.3	109	.19	5	35.4	900
40-105	4-40	176	80	111	44	6	153	0.24	6	7	180	.19	5	35.4	900
85-195	30-90	212	100	210	99	3.6	92	0.24	6	4.3	109	.19	5	35.4	900
85-230	30-110	212	100	249	121	3	76	0.24	6	3.5	90	.19	5	35.4	900
85-248	30-120	212	100	270	132	3.6	92	0.24	6	2.9	75	.19	5	35.4	900
85-302	30-150	212	100	316	158	4.1	106	0.24	6	●	●	●	●	35.4	900

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APPLICATIONS

- Chillers
- Test systems
- Food service equipment

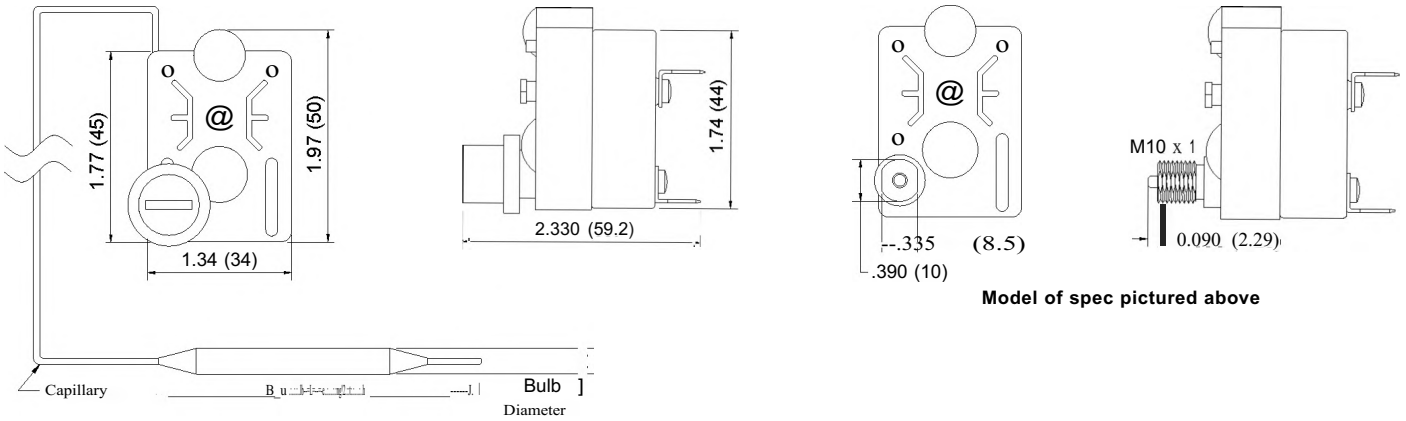
This non-recycling device trips at a predetermined, calibrated set point shutting down the thermal circuit until reactivated. The circuit will remain inactive until the thermostat is reactivated by manually depressing the reset button. Selco CAP-MR Series meets the requirement of U.L. trip-free device where the circuit remains open while the manual reset is held depressed.

Models available from stock - subject to availability

Model Number	Set Point (ºF)	Capillary Length (inches)	Bulb Length (inches)	Bulb Dia. (inches)	Terminals
CAP-MR-140-SS	140 ± 5.5	36	3.6	.24	.250 quick connects
CAP-MR-179	179 ± 5.5	36	3.3	.24	.250 quick connects
CAP-MR-200	200 ± 5.5	36	3.59	.24	.250 quick connects
CAP-MR-245	245 ± 7.2	12	3.3	.24	screw type
CAP-MR-284	284 ± 10.8	36	4.48	.19	.250 quick connects
CAP-MR-320	320 ± 10.8	36	3.0	.24	screw type
CAP-MR-392	392 ± 10.8	36	3.3	.24	.250 quick connects
CAP-MR-450	450 ± 16	36	4.7	.19	.250 quick connects
CAP-MR-500-1	500 ± 16	78	3.0	.19	.250 quick connects
CAP-MR-572-B	572 ± 18	36	3.0	.19	.250 quick connects
CAP-MR-700	700 ± 18	36	6.0	.12	.250 quick connects

SPECIFICATIONS

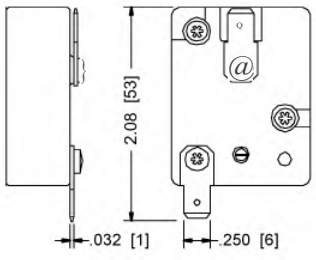
Temperature range	32ºF to 752ºF (0ºC to 400ºC)
UL electrical ratings	120/240VAC, 20 Amps, Resistive, 6,000 Cycles 120VAC, 5 Amps, Inductive, 6,000 Cycles 240VAC, 2.9 Amps, Inductive, 6,000 Cycles 125VA (pilot duty), 6,000 Cycles
VDE electrical ratings	250VAC, 5 Amps, Inductive 400VAC, 1 Amp, Inductive 300 Cycles
Options can include	Compression fittings for mounting, screw terminals, quick connects, gold contacts, earth terminals, DIP seal
Approvals	UL Recognized File No. E168164(S), XAPX2 C-UL Recognized File No. E168164(S), XAPX8 E.C. Declaration of Conformity RoHS Compliant
European	VDE, SEMKO, KEMA



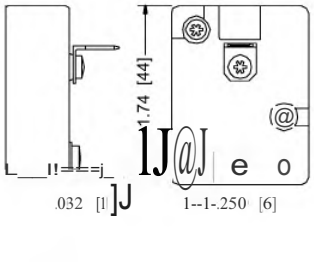
Model of spec pictured above

Terminal Options

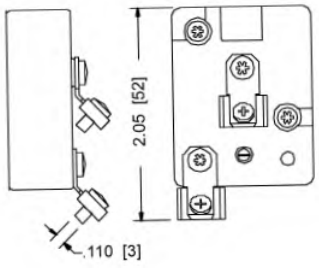
Horizontal



Vertical



Screw (#8-32 or 4mm)



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Bulb & Capillary Thermostat Accessories

Control Knobs and Dials

Selco's line of Bulb & Capillary thermostats come complete with a variety of brackets, terminals, dial plates, knobs and adjustment shaft options to accommodate a wide range of installation requirements. Custom printing available.

2266A/68-118

2302L

CAP-XXX-KNOB-1
(model shown with bezel)

A1010-3-250-SS2B

CAP-COMET-KNOB

CAP-XXX-KNOB
(model shown with bezel)

CAP-1-10-KNOB

DRD157006/109
DRD157006/110

Models available from stock - subject to availability

Part Number	Diameter		Height		Material	Printing
	inches	mm	inches	mm		
2266A/68-118	2.62	66.5	1.00	25.5	Thermoplastic	Numbers 1 thru 8, OFF
2302L	1.56	39.5	0.96	24.5	Thermoplastic	White Dot
A1010-3-250-SS2B	1.85	47	0.84	21.5	ABS with Aluminum Top	Optional
CAP-1-10-KNOB	1.65	42	0.63	16	Thermoplastic	Number 1 thru 10
CAP-ARROW-KNOB	1.44	36.7	0.38	9.6	Thermoplastic	White Swirl and Number 0
CAP-COMET-KNOB	1.65	42	0.63	16	Thermoplastic	White Swirl and Number 0
CAP-XXX-KNOB	1.65	42	0.63	16	Thermoplastic	Optional
CAP-XXX-KNOB-1	1.44	36.7	0.38	9.6	Thermoplastic	Optional
DRD157006/109	1.14	29	0.69	17.5	Nylon	White Arrow (same side as flat of 'D' shaft)
DRD157006/110	1.14	29	0.69	17.5	Nylon	White Arrow (90º from flat)
CAP-BEZELS	2.36	60	0.16	4.2	Plated	●
CAP-BEZELS-1	1.91	48	0.15	3.7	Plated	●

* Shaft size: All knobs fit .24" x .18" (6mm x 4.6mm)

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Custom Assembly Services Providing Cost and Time Savings As Easy As *1-2-3*

During the course of production, a product may have to go to several stations for soldering, crimping, or cutting. With Selco's value-added services, customers can order the product fully assembled, saving time in all areas - purchasing, receiving, labor, and production.

This valuable service offers a variety of custom assemblies and specialty product add-ons for Selco's line of thermal products. Selco's value added service provides custom brackets, specialty connectors and crimp terminals, solder or quick disconnect wire attachment, epoxy over-molding, application tooling, and lead wire and cable assembly. Also offered are special kits containing disc thermostats, thermal cut-offs, insulation sleeving, and molex connectors. Additionally, with Selco's volume purchasing of these small speciality items, customers eliminate paying premium prices.

Call to today to find out how Selco can eliminate the hassle of assembly and purchasing details that end up costing valuable time and money.

1

Call, fax or e-mail Selco's friendly and helpful customer support and select from Selco's large inventory of temperature sensors.

2

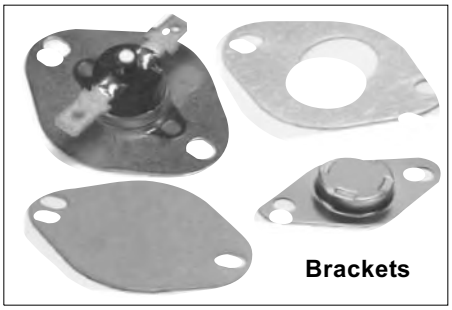
Choose from the various value added services provided by Selco (i.e., custom brackets, epoxy over-molding).

Consult with Selco customer support for further available value added services.

3

The fully assembled product is complete and ready to install in your application.

It's as easy as 1-2-3 and saves time and money.



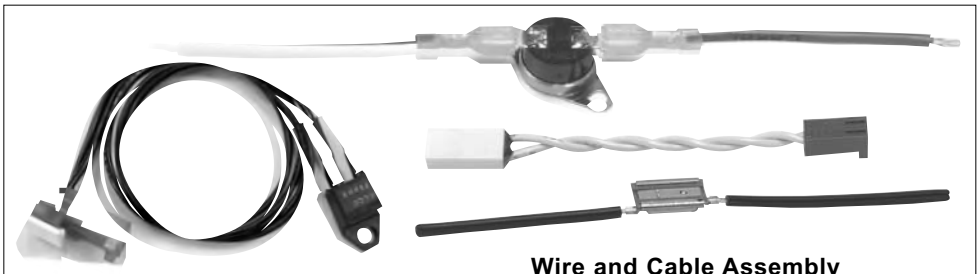
Brackets

Lead Bending

Connectors

Mylar Sleeving

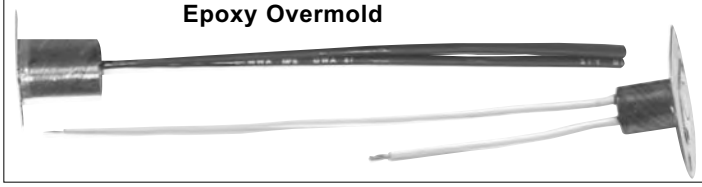
Probe Housings with Custom Termination



Wire and Cable Assembly

Epoxy Seal

Epoxy Overmold



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NTC Thermistors

Selco's line of high-quality, high-performance thermistors includes negative (NTC) temperature coefficients offering a complete selection from interchangeable, point matched, surface mount, and thin film models to life sciences probes as small as 0.019" in diameter. In addition, Selco can address custom applications with virtually unlimited options in materials, configurations, leads, and connections.

The complete selection of NTC thermistors offered by Selco includes:

Interchangeable - IN Series
- Choice of 1.0º to 0.1º tolerance
- -50ºC to 150ºC temperature range
- .095" Epoxy head with various wire leads

Point Matched - PM Series
- -50ºC to 150ºC temperature range
- Accuracy for a single target temperature
- .095" Epoxy head and choice of wire leads

High Precision - HT Series
- -50ºC to 110ºC temperature range
- .157" Epoxy head size is larger than IN and PM models
- Excellent thermal cycle endurance over -50ºC to 110ºC

High Precision - HP Series
- More robust leads than HT Series
- Leads are .02" diameter and they can be board mounted
- Similar to High Precision - HT Series but smaller .14" epoxy head

Temperature Sensing - TS Series
- 3.42" overall length
- Insulated copper alloy wire leads
- Epoxy head smaller than IN and PM models

Thin Film - TF Series
- Our thinnest product at .030"
- Four standard lengths available
- Thermistor is covered by Capton Polyimide

Diode Type - DT Series
- DO35 standard package size
- Glass encapsulated thermistor
- Largest temperature range available - from -50ºC to 250ºC

Surface Mount - CT Series
- Maximum power rating of 4-6 mW at 25ºC
- Low dissipation value of 0.9 mW/C in still air
- Standard chip package sizes: 0603, 0805 and 1206

Surface Mount - SM Series
- Dissipation value of 3.5 mW/C in still air
- Maximum power rating of 350-450 mW at 25ºC
- Standard chip package sizes: 0402, 0603 and 0805

TR Series - White goods products - harsh environments
- Used in appliances
- Maximum power rating of 250-500 mW at 25ºC
- Compact stainless steel case with integral plug

Life Sciences - LS Series
- Small size at .078" head diameter
- Thermal time constant of 1.25 seconds in stirred oil

Life Sciences Mini - LSMN Series
- Smaller size at .035" head diameter
- Thermal time constant of 0.4 seconds in stirred oil

Life Sciences Micro - LSMC Series
- Smallest size at .0185" head diameter
- Thermal time constant of .25 seconds in stirred oil

Custom Thermistors and Probes
- You choose the thermistor features, probe housing, wire and connectors to fit your application

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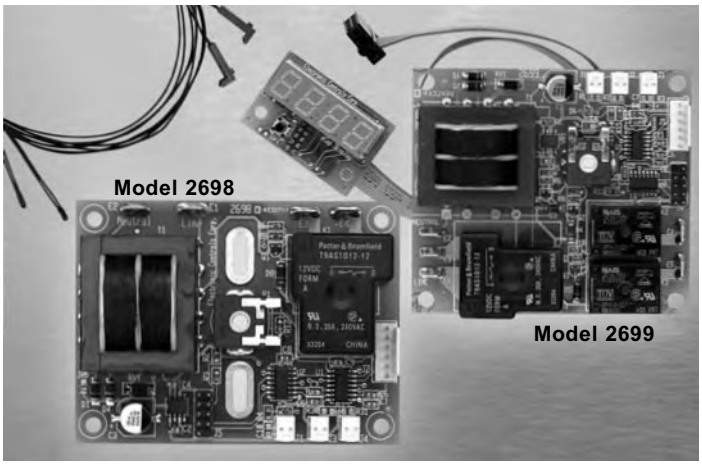
Cold/Hot Temperature Controllers
Models 2698/2699



FEATURES
- Class 2 Isolation
- Microprocessor control
- UL approved file #: E230832
- Optional external switch input
- Conformal coating for operation in moist environments
- Optional expansion connector to support a remote digital display/user panel

Selco/ECC Model 2698/2699 Cold/Hot Controllers offer high-end electronic features to provide extremely sophisticated sensing and control of heating, cooling, and humidity. Typical applications include cooling and heating controls for cooking equipment, freezers, refrigerators, and dehumidifiers.

The electronic controllers feature a number of enhanced control options including two or four-digit push-button display panels and bi-color LED indication. Incorporating microprocessor-based technology, the controllers provide excellent performance accuracy, repeatability, and stability.

For maximum versatility, users can select from power input options of 115 VAC or 230 VAC, with Class 2 Isolation Transformer. Further flexibility is provided via the onboard POT or connector that can optionally be used with input signals such as humidity, pressure, or other.

Model 2699 has all the same features as Model 2698, however, includes up to three outputs and onboard bi-color LED indicator. The additional outputs can be programmed to drive a fan, lights, damper, heater, or compressor.

Both models have been designed for ON/OFF cooling control for temperature between -40°F to +100°F (-40°C to +24°C), or heating control for temperatures between 0°F to 285°F (-170°C to 140°C). Our library of tested application software helps us respond quickly to your requests for testing samples. Please contact us with your control needs.

SPECIFICATIONS

MODEL 2698	
Inputs	
Power	Standard Transformer 115 or 230 VAC (factory settable) Class 2 Isolation Transformer - 2.4VA
Signal	Two thermistors maximum Optional external switch input Onboard POT or connector for external POT
Outputs	
Power	One 30A SPST or SPDT Relay
Signal	Optional connector to support remote digital display or user panel
Controls	Onboard potentiometer used for setpoint adjustment or adjustment on user panel
Environment	Operational temperature range: 0ºF to 140ºF Conformal coated
Mechanical	PCB size: 3.40” L x 2.55” W
Compatible User/ Display Panels	Four digits/one push-button display panel (ECC part number: 399-0643) Four digits/five push-buttons, 6 LED user panel (ECC part number: 399-0644) Two digits/four push-buttons, 4 LED user panel (ECC part number: 399-0646)
MODEL 2699	
Inputs	
Power	Standard Transformer 115 or 230 VAC (factory settable) Class 2 Isolation Transformer - 2.4VA or 6VA
Signal	Two thermistors maximum Optional external switch Onboard POT or connector for external POT
Outputs	
Power	Output 1: 30A SPST relay Output 2: 7A or 10A SPST relay Output 3: 7A or 10A SPST relay
Controls	Onboard potentiometer used for setpoint adjustment or adjustment on user panel
Indicators	Optional onboard bi-color LED indicator
Environment	Operational temperature range: 0ºF to 140ºF Conformal coated
Mechanical	PCB size: 3.40” L x 3.10” W
Compatible User/ Display Panels	Four digits/one push-button display panel (ECC part number: 399-0643) Four digits/five push-buttons, 6 LED user panel (ECC part number: 399-0644) Two digits/four push-buttons, 4 LED user panel (ECC part number: 399-0646)

NEW - Available IQ2008

Model 2699B - Electronic Control

Electronic Control Designed With a Large Microprocessor for Complex Applications

(visit www.selcoproducts for current information on Model 2699B)

FEATURES:

- Multiple Input Capability
    - * Connection for thermocouple with range of 0ºC to 999ºC
    - * Connectiors for two thermistors with ranges of -40ºC to +150ºC
    - * Connections for up to two additional digital inputs, for humidity, pressure, etc.
- Support for standard or custom user-display panels
- 3 Onborad Relays
    - * One rated 30 Amps
    - * Two rated at 10 Amps
- Operate with 120VAC or 230VAC
- UL and CSA approvals pending

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Digital Temperature & Time Controller
Model 2901A

FEATURES
- Microprocessor control
- UL approved file #: E230832
- LED display of time and temperature
- Temperature setpoint differential adjustable from 1 to 10 degrees
- All operating mode selections and parameter settings can be set from the front panel
- Multiple modes of operation for timer only or temperature and time controller

BENEFITS
- Solid state relay output
- Easy-to-use and program
- A variety of input voltages

Model 2901A Digital Temperature and Time Controller features digital sensing and microprocessor-based solid-state technology for reliability and accuracy. Offering a broad temperature control range from 40ºF to 999ºF (4ºC to 530ºC), the controller can be used for a wide variety of commercial food equipment and industrial control applications.

Five operating modes provide the user with a great degree of flexibility from the time only control or simultaneous temperature and time control. Depending on the mode selected, users can program for simple on/off temperature/time control, cook/heat and setback temperatures, or hold and cooking/heating temperatures. All operating mode selections and parameters are easily set from the front panel for optimum user convenience.

The 2901A Controllers allows user selection of type “J” (±5ºF accuracy) or “K” (±1.8ºF accuracy) thermocouple sensors and user-selectable temperature readings in ºF or ºC. Temperature setpoint differential is adjustable from 1 to 10 degrees. Power options include choice of Selco/ECC’s Solid State Transformer that automatically adjusts to line inputs from 75 to 305 VAC; 50/60Hz, or Standard Transformer input of 115/230VAC, 50/60Hz.

The 2901A features a 0.56-inch, four-digit LED display for easy readability of temperature and time indication and measures 6.2” L x 2.1” W. UL approved file #: E230832.

SPECIFICATIONS

Input	
Power	Standard Transformer 115/230VAC; 50/60Hz Uses 0 Ω jumpers (factory set)
Sensors	Thermocouple - one input maximum Types “J” or “K” - connected by two screw terminal blocks “J” Type temperature range: 200ºF to 450ºF; ±5ºF accuracy “K” Type temperature range: 200ºF to 450ºF; ±1.8ºF accuracy “K” Type temperature range: 40ºF to 999ºF; TBD accuracy
External	Two 1/4” quick connect terminals for START switch at E1 & E2 (closure to ground)
Outputs	Drive for off-board 12V SSR Audible (onboard) beeper
Controls	Standard controls consist of three pushbutton switches (MODE/SET, DOWN, and UP). An optional fourth pushbutton can be implemented for various applications.
Indicators	4 seven segment LED displays
Environment	Operational temperature range: 0º to 158ºF
Factory Options	Miniature iso-therm connector instead of two screw terminal blocks for thermocouple

ORDERING MAP

2901A - X 0 0 0

Input Voltage Options
1 = 115VAC; 50/60Hz
2 = 230VAC; 50/60Hz
3 = 208VAC; 50/60Hz
4 = User Selectable - Standard Transformer 115/230VAC; 50/60Hz
5 = 12-24VAC/VDC; 50/60Hz”

Recommended SSR External Output Device

Description	Selco/ECC Part #
10 Amps with .250 quick connects	1310-0110
30 Amps with .250 quick connects	1310-0130
10 Amps with screw terminals	1310-0210
30 Amps with screw terminals	1310-0230

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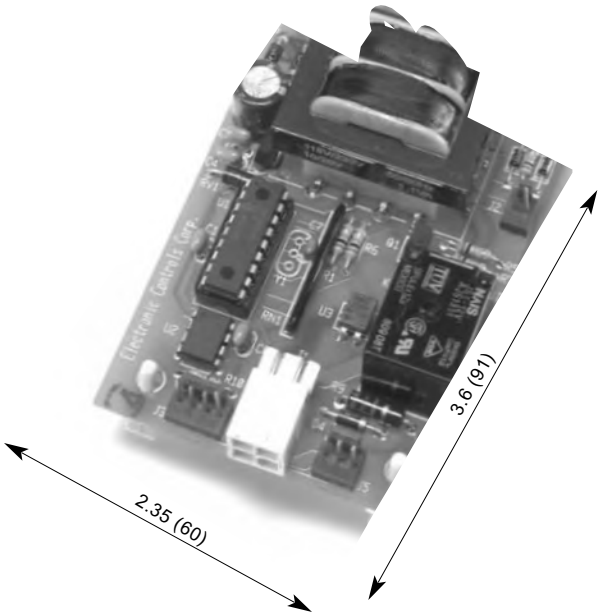
Programmable Timer
Model 2831



BENEFITS
- Easy-to-use and program
- Dual range programmable timer
- Optional indicating panel mount LED
- A variety of power inputs and outputs
- Maintains memory (time is saved during power loss)

FEATURES
- UL approved file #: E70766
- Dual teachable time settings
- Time setting is done by example
- Ideal for timed food or liquid dispensing
  Application examples: coffee brewing, cheese and chemical dispensing
- Optional flowmeter support for volume instead of time mode
- Two different start modes, (Isolated) AC activation or panel push button

Model 2831 is a dual range timer and is also designed to be a plug-in replacement for Model 2577 Teachme Timer. Both timing ranges are programmed by example. For instance, if you are filling a glass with liquid, just fill the glass once while in program mode, and the time will be remembered (even if power is removed) until it is reprogrammed. An optional panel mount LED indicates that dispensing is in progress. The start button can either be connected to the AC line for 110/220 VAC activation or if low voltage is desired, the button can be connected straight to the board.

SPECIFICATIONS

Input Power	Selection either by fixed factory setting or jumper selectable field setting
Input/Output Power Connections	Amp Part #: 770968-1, Type 4 pin PCB mount connector (Amp Mating Plug #: 172167-1, Pins #: 77098-1)
Input Signals	AC start, cycle select, program, alternate start
Input Signal Connections	0.1" Molex IDC type 4 pin connector
Outputs	Connects up to 10A load to input power
Control Logic	Two separately teachable timers with one start switch and one timing select switch
Timing Range	0.050 seconds to 54 minutes Other timing ranges available
Timing Resolution	0.050 seconds
Timing Repeatability	1%
Mechanical	Overall dimensions: 2.35" W x 3.6" L x 1.5" D Four standoffs are included to mount in 0.156" mounting holes. Mounting footprint is for 1.75" x 3.0" mounting dimensions.
Maximum Operating Environmental Temperature	+30ºF to 158ºF; 0 to 90%RH, non-condensing
Options	Conformal coating

ORDERING MAP

2831 - X X X X

Input Voltage Options
1 = 115VAC; 50/60Hz
2 = 230VAC; 50/60Hz
3 = 208VAC; 50/60Hz
4 = User Selectable - 115/230VAC; 50/60Hz
5 = 24VAC/VDC

Output Connection
0 = SSR output
1 = Relay output committed to input voltage connection

Output Type
1 = 10 Amps Electromechanical (SPDT)*
4 = 1 Amp onboard SSR**

Control Type
1 = Standard time
2 = Pulse - type flowmeter

* Maximum DC switching voltage 100VDC at 5 Amps
** 6 Amps maximum or 1 Amp average current

Glossary and Terms and Conditions

Air mount: Designed to sense the air temperature

Ambient temperature: The surrounding temperature or environmental temperature

Automatic reset: A type of thermostat that will reset itself at a specific temperature (set point - differential = reset temperature)

Bimetal: Two different metals that bond together to form the disc that actuates the thermostat when reaching a specified temperature

Close on-rise: Normally open contacts; when the temperature rises to the specified temperature the contacts close

Contact resistance: The resistance measured in ohms from across the circuit

Dielectric strength: The voltage that an insulating material can withstand before breakdown occurs

Differential: The difference between opening and closing temperatures - also known as the hysteresis

Electrical contact rating: The maximum volts and amps that the device has been tested to withstand

Exposure temperature: Thermal environment a device will see during application operation

Epoxy seal: A seal to protect against dust and moisture

Insulation resistance: Measures the resistance of the insulating member of the device to a direct voltage

FLA (Full load amps): The amount of current a motor will pull in a locked condition

Life cycles: The endurance rating of a device expressed in number of operations with stated electrical load applied

LRA (Locked rotor amps): The amount of current a motor will pull in a locked condition

Manual reset: The thermostat will remain open until it resets manually - also known as a high limit

Open on-rise: Normally closed contacts; when the temperature rises to the specified temperature the contacts open

PBT: Polybutylene Terphtalate

Phenolic: An insulating thermo-set plastic used for the body of specific thermostats

Set point: Operating temperature; temperature at which the disc changes its curvature (snaps) to open or close electrical contacts

SPST (Single pole, single throw): One set of terminals to activate or deactivate a circuit

SPDT (Single pole, double throw): An electrical switch capable of controlling two different circuits

Snap-action: Fast sudden change in temperature that will cause the bimetal to snap

Surface mount: Designed to sense temperature of the surface as opposed to the air temperature

Tolerance: An additional range above or below the nominal set point

Warranty
One year on most products. Seller extends the same warranties to buyer as the manufacturer extends to seller. All other warranties, whether expressed or implied, are hereby disclaimed except as set forth herein. It is the buyer's sole responsibility to specify and determine the suitability of a particular control or component based on their unique individual applications and requirements.

Damages and Shortages
Inspect immediately for damages and shortages upon receipt of merchandise. All claims for shortage, damage or shipment error must be made within 14 days of receipt.

Payment Terms
Selco accepts Visa, Mastercard, American Express, C.O.D., or Net 30 on approved credit.

Returns
No returns will be accepted without seller's prior authorization. Please contact a Selco sales representative for documentation authorizing each return and include a copy with the returned product. Returns should include P.O. number, invoice number and explanation for return. All returns must be freight prepaid unless authorized by Selco. All authorized returns are subject to a restocking charge. Credit will be issued only after receipt and examination of returned merchandise. Replacement merchandise will be sent out and invoiced as a new order. Any credit due will be issued against the old invoice.

Minimum Orders
Minimum order of $50.00 for single shipment orders and $100.00 on blanket (multiple shipments) orders.

Contact Selco for distributors or representation in your area

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Notes

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