



# 55 Series

## 55 Series

### REMOTE MOUNTING TEMPERATURE SWITCH AND CONTROL

#### FEATURES

- Single or Dual 15 A Switch Output
- Panel or Surface Mount
- Skeleton or NEMA 4 Construction
- Adjustable Ranges Within -130 to 650°F (-90 to 340°C)



### OVERVIEW

The E55 Series provides rugged, dependable temperature control for many applications. Available in single or dual output versions, with either a NEMA 4X enclosed or skeleton construction, the E55 combines flexibility with compact size. It has been used for years in diverse applications such as food service appliances, oven control and heat tracing.

### FEATURES

- Single or dual 15 A switch output
- Panel or surface mount
- Skeleton or NEMA 4X construction
- Adjustable ranges within -130 to 650°F (-90 to 340°C)

### SPECIFICATIONS

<b>Storage temperature</b>	-65 to 160°F (-54 to 71°C)
<b>Ambient temperature limits</b>	-40 to 160°F (-40 to 71°C); set point typically shifts less than 1% of range for a 50°F (28°C) ambient temperature change
<b>Shock</b>	Set point repeats after 15 G, 10 millisecond duration
<b>Vibration</b>	Set point repeats after 2.5 G, 5-500 CPS
<b>Enclosure classification</b>	Type E55 & E55A: Designed to meet NEMA 4X requirements Types E55S & E55AS: Skeleton, Not applicable
<b>Set point repeatability</b>	± 1% of adjustable range
<b>Switch output</b>	One or two SPDT; dual switch may be separated up to 100% of range; switches may be wired "normally open" or "normally closed"
<b>Electrical rating</b>	15 A 125/250/480 VAC resistive; 22 A 480 VAC for E55-R25HT and E55-L24HT
<b>Enclosure (if applicable)</b>	Die cast aluminum, epoxy powder coated with stainless steel, gasketed adjustment cover
<b>Weight</b>	Types E55S, E55AS (skeleton): approximately 12 oz.; Types E55, E55A: approximately 1 lb.
<b>Electrical connection</b>	1/2" NPT female (E55 and E55A)
<b>Bulb and capillary</b>	Models E20BC - E23BC: 6 feet copper; Models E20BS - E23BS: 6 feet stainless steel Model R25HT-101: 10 feet stainless steel Model L24HT: stainless steel, Local sensor, no capillary, for ambient sensing
<b>Temperature fill</b>	Non-toxic oil
<b>Temperature deadband</b>	Typically 1% of range under laboratory conditions (70°F circulating bath at rate of 1/2°F per minute change)

## APPROVALS



Types E55, E55A: UL 873 listed, File # E10667;

Types E55S, E55AS; UL 873 recognized, File # E10667;

CSA certified C22.2 no. 24, File # LR7814

CE Compliance with Low Voltage Directive (LVD)

## MODEL CHART

Model	Stock #				Adjustable Set Point Range		Max. Temp.		Dial Div		Bulb Size
	E55	E55A	E55S	E55AS	°F	°C	°F	°C	°F	°C	OD x Length
<b>Copper bulb &amp; capillary</b>											
E20BC	–	–	–	–	-130 to 120	-90 to 50	170	75	10	5	3/8 x 4 3/8
E21BC	9068	9236	9349	–	0 to 150	-15 to 65	200	90	5	5	3/8 x 6 7/8
E22BC	9075	9257	9401	–	50 to 300	10 to 145	350	175	10	5	3/8 x 4 3/8
E23BC	–	–	9398	–	150 to 650	70 to 340	700	370	25	10	3/8 x 3 5/8
<b>Stainless steel bulb and capillary</b>											
E20BS	–	–	–	NA	-130 to 120	-90 to 50	170	75	10	5	3/8 x 4 3/8
E21BS	–	–	–	–	0 to 150	-15 to 65	200	90	5	5	3/8 x 6 7/8
E22BS	–	–	–	–	50 to 300	10 to 145	350	175	10	5	3/8 x 4 3/8
E23BS	–	–	–	–	150 to 650	70 to 340	700	370	25	10	3/8 x 3 5/8
E55 R25HT	–	NA	NA	NA	25 to 325		600		10		1/4 x 7 3/16
E55 L24HT	–	NA	NA	NA	15 to 140		190		5		3/8 x 7

## HOW TO ORDER

### BUILDING A PART NUMBER

#### Select a type

Refer to the "Type" section below.

Determine type number based on switch output, enclosure, adjustment and reference.

Fill in the type portion of your part number with the corresponding number.

#### Select a Model

Refer to the "Model Charts".

Determine model or stock number based on adjustable range, and capillary material.

Fill in the model portion of your part number with the corresponding number.

#### Select an Option

Refer to the "Options" section.

Determine option number based on switch output, optional materials or other product enhancements.

Fill in the option portion of your part number with the corresponding number.

Leave "option" portion blank if no options are needed. *FOR MULTIPLE OPTIONS:* Call United Electric Controls.

### TYPE

E55:	Bulb & capillary; one SPDT output; Epoxy coated enclosure; external adjustment with reference dial, tamper-resistant cover
E55A:	Bulb & capillary; two SPDT outputs; Epoxy coated enclosure; external adjustment with reference dial, tamper-resistant cover
E55S:	Bulb & capillary; one SPDT output; skeleton construction; external adjustment with reference dial
E55AS:	Bulb & capillary; two SPDT outputs; skeleton construction; external adjustment with reference dial

### OPTIONS

#### SWITCHES

0500	Close deadband, 5 A 125/250 VAC resistive. NOT AVAILABLE ON MODELS R25HT, L24HT
1530	External manual reset, 15 A 125/250/480 VAC resistive; reset on increasing temperature. NOT AVAILABLE ON TYPES E55S, E55AS & MODELS R25HT, L24HT
2000	20 A 125/250 VAC resistive NOT AVAILABLE ON MODELS R25HT, L24HT

#### GENERAL

M020	Pilot light AVAILABLE HEAT TRACE MODELS R25HT, L24HT ONLY
M201	Factory set one switch; specify increasing or decreasing temperature and set point
M202	Factory set two switches; specify increasing or decreasing temperature and set point. NOT AVAILABLE ON TYPES E55, E55S
M270	Calibrated dial in Celcius
M444	Paper ID tag
M446	Stainless steel ID tag & wire attachment (attachment location will vary depending on product)

#### UNION CONNECTORS

W027	1/2" NPT with 3/4" bushing, brass
W028	1/2" NPT with 3/4" bushing, 304 stainless steel
W045	3/4" NPT, brass
W046	3/4" NPT, 304 stainless steel
W050	1/2" NPT, 304 stainless steel
W051	1/2" NPT, brass



NOT AVAILABLE ON MODELS R25HT, L24HT

**OPTIONS CONTINUED**

FABRICATED SEPARABLE WALLS, REMOTE TEMPERATURE

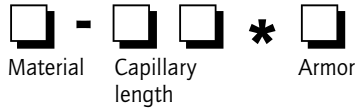
W075	Brass 1/2" NPT with 3/4" bushing adapter x 4" BT
W118	Brass 1/2" NPT with 3/4" bushing adapter x 7" BT
W191	Brass 1/2" NPT x 4" BT
W192	Brass 1/2" NPT x 7" BT
W076	304 Stainless steel 1/2" NPT with 3/4" bushing adapter x 4" BT
W119	304 Stainless steel 1/2" NPT with 3/4" bushing adapter x 7" BT
W177	304 Stainless steel 1/2" NPT x 7" BT
W193	304 Stainless steel 1/2" NPT x 4" BT

} NOT AVAILABLE ON MODELS R25HT, L24HT

OPTIONAL CAPILLARY MATERIAL, LENGTH, AND SLEEVE PROTECTION MATERIAL

To specify, place codes in boxes corresponding to option and suffix with dash to type and model selection.

Example:



**Material**

S= 304 stainless steel capillary is standard for most products.  
C= Copper capillary.

**Capillary length**

Consult UE on repeatability and ambient effects on capillary lengths greater than six feet.  
06  
10  
15  
20  
25  
30

**Armor**

0= None  
1= Stainless steel armor

**CAPABILITIES**

These and other modified and custom designs or options are available to help you meet specific application requirements. Consult your UE representative for other product capabilities, order restrictions and special conditions.

- Special ranges
- Many bulb configurations
- Status light for indication of setting mode

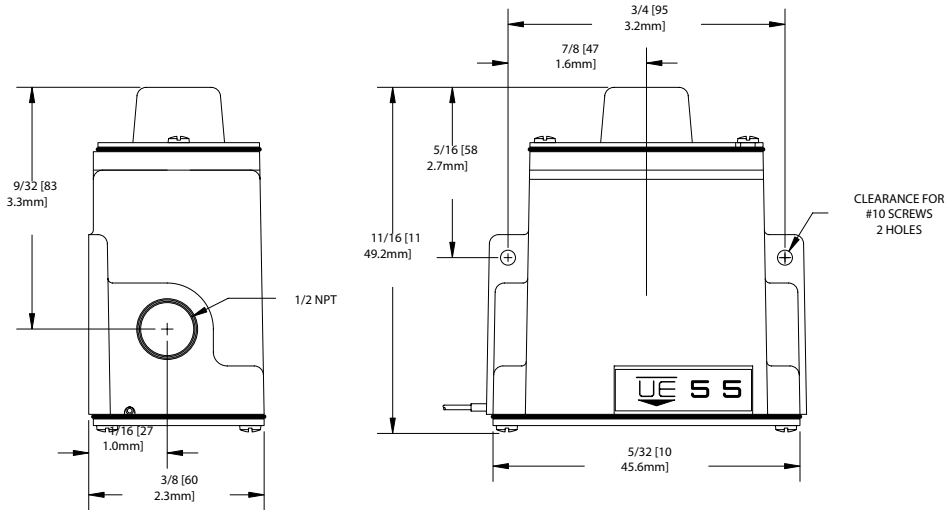


# 55 Series

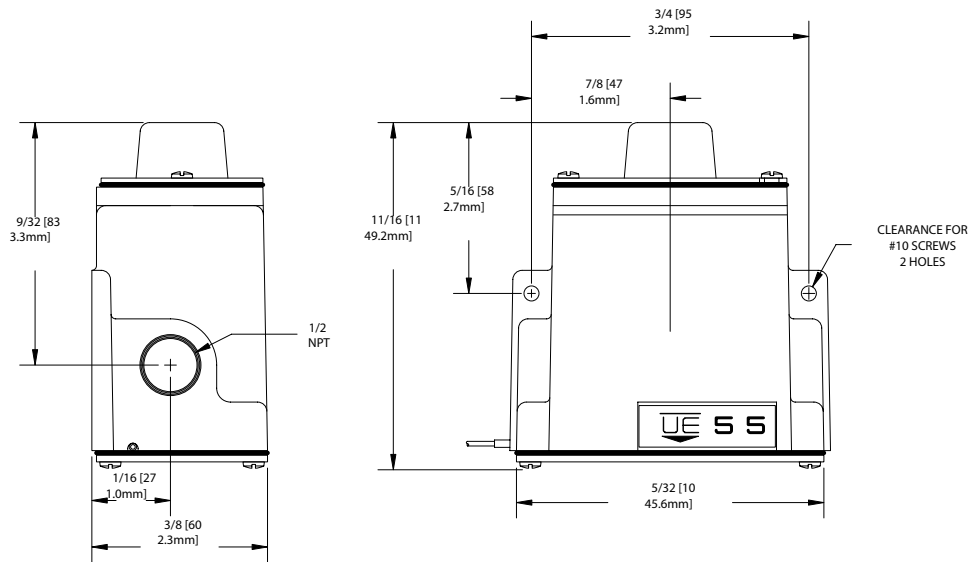
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### DIMENSIONAL DRAWINGS

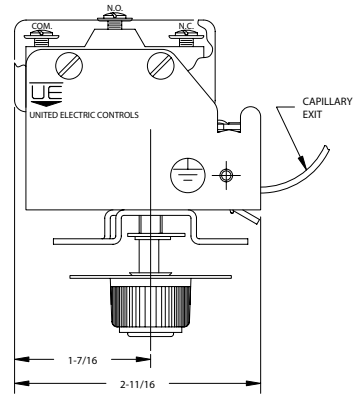
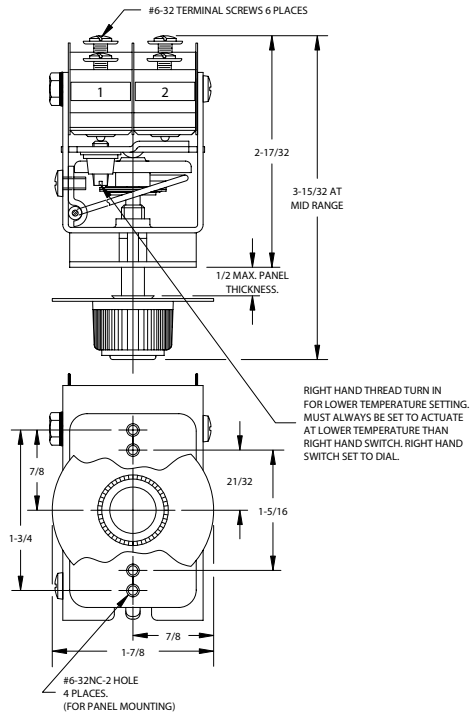
#### E55



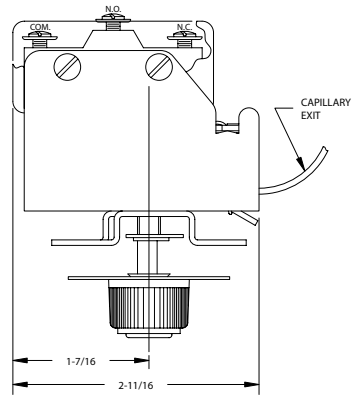
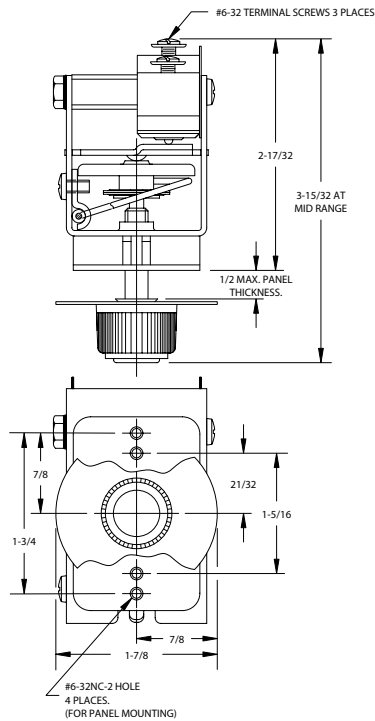
#### E55A



E55AS



E55S



## RECOMMENDED PRACTICES AND WARNINGS

United Electric Controls Company recommends careful consideration of the following factors when specifying and installing UE pressure and temperature units. Before installing a unit, the Installation and Maintenance instructions provided with unit must be read and understood.

- To avoid damaging unit, proof pressure and maximum temperature limits stated in literature and on nameplates must never be exceeded, even by surges in the system. Operation of the unit up to maximum temperature is acceptable on a limited basis (i.e., start-up, testing) but continuous operation must be restricted to the designated adjustable range. Excessive cycling at maximum temperature limits could reduce sensor life.
- A back-up unit is necessary for applications where damage to a primary unit could endanger life, limb or property. A high or low limit switch is necessary for applications where a dangerous runaway condition could result.
- The adjustable range must be selected so that incorrect, inadvertent or malicious setting at any range point cannot result in an unsafe system condition.
- Install unit where shock, vibration and ambient temperature fluctuations will not damage unit or affect operation. Orient unit so that moisture does not enter the enclosure via the electrical connection. When appropriate, this entry point should be sealed to prevent moisture entry.
- Unit must not be altered or modified after shipment. Consult UE if modification is necessary.
- Monitor operation to observe warning signs of possible damage to unit, such as drift in set point or faulty display. Check unit immediately.
- Preventative maintenance and periodic testing is necessary for critical applications where damage could endanger property or personnel.
- For all applications, a factory set unit should be tested before use.
- Electrical ratings stated in literature and on nameplate must not be exceeded. Overload on a switch can cause damage, even on the first cycle. Wire unit according to local and national electrical codes, using wire size recommended in installation sheet.
- Use only factory authorized replacement parts and procedures.
- Do not mount unit in ambient temp. exceeding published limits.

## LIMITED WARRANTY OF REPAIR AND REPLACEMENT

Seller warrants that the product hereby purchased is, upon delivery, free from defects in material and workmanship and that any such product which is found to be defective in such workmanship or material will be repaired or replaced by Seller (F.O.B. UE Watertown); provided, however, that this warranty applies only to equipment found to be so defective within a period of 18 months from the date of manufacture by the Seller (36 months for the Spectra 12 and One Series products). Seller shall not be obligated under this warranty for alleged defects which examination discloses are due to tampering, misuse, neglect, improper storage, and in any case where products are disassembled by anyone other than authorized Seller's representatives.

EXCEPT FOR THE LIMITED WARRANTY OF REPAIR AND REPLACEMENT STATED ABOVE, SELLER DISCLAIMS ALL WARRANTIES WHATSOEVER WITH RESPECT TO THE PRODUCT, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

## LIABILITY LIMITATION

SELLER'S LIABILITY TO BUYER FOR ANY LOSS OR CLAIM, INCLUDING LIABILITY INCURRED IN CONNECTION WITH (I) BREACH OF ANY WARRANTY WHATSOEVER EXPRESSED OR IMPLIED, (II) A BREACH OF CONTRACT, (III) A NEGLIGENT ACT OR ACTS (OR NEGLIGENT FAILURE TO ACT) COMMITTED BY SELLER, OR (IV) AN ACT FOR WHICH STRICT LIABILITY WILL BE IMPUTED TO SELLER, IS LIMITED TO THE LIMITED WARRANTY OF REPAIR AND REPLACEMENT STATED HEREIN. IN NO EVENT SHALL THE SELLER BE LIABLE FOR ANY SPECIAL, INDIRECT, CONSEQUENTIAL OR OTHER DAMAGES OF A LIKE GENERAL NATURE, INCLUDING, WITHOUT LIMITATION, LOSS OF PROFITS OR PRODUCTION, OR LOSS OR EXPENSES OF ANY NATURE INCURRED BY THE BUYER OR ANY THIRD PARTY.

*UE specifications subject to change without notice.*

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