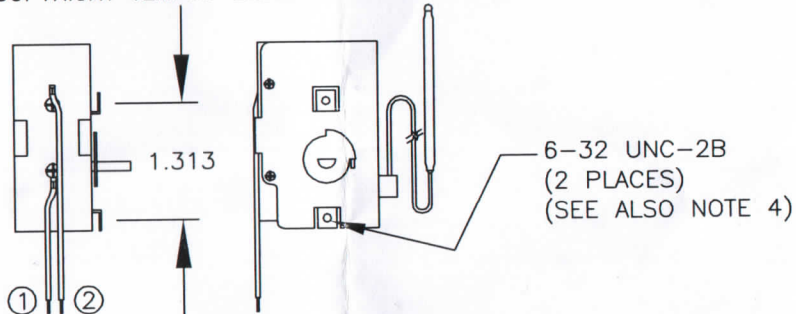
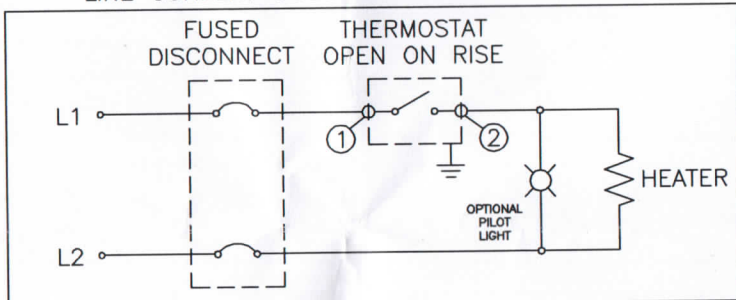


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TYPICAL CIRCUIT WHEN VOLTAGE AND/OR LINE CURRENT DOES NOT EXCEED RATINGS



WARNING: HAZARD OF ELECTRIC SHOCK. INSTALLATION MUST BE GROUNDED TO EARTH TO AVOID SHOCK HAZARD. DISCONNECT POWER TO INSTALLATION BEFORE SERVICING OR INSTALLING THERMOSTAT.

WARNING: WIRE INSULATION RATING MUST BE SUITABLE FOR THE AMBIENT TEMPERATURE OF THE WIRING INSTALLATION. AMPACITY & VOLTAGE RATINGS SHOULD BE IN ACCORDANCE WITH NEC (NATIONAL ELECTRICAL CODE) & OTHER LOCAL REGULATIONS.

CAUTION DO NOT USE THE THERMOSTAT AS A POWER SWITCH. THERMOSTATS ARE NOT A FAIL SAFE DEVICE. USE AN APPROVED LIMIT CONTROL FOR SAFE OPERATION.

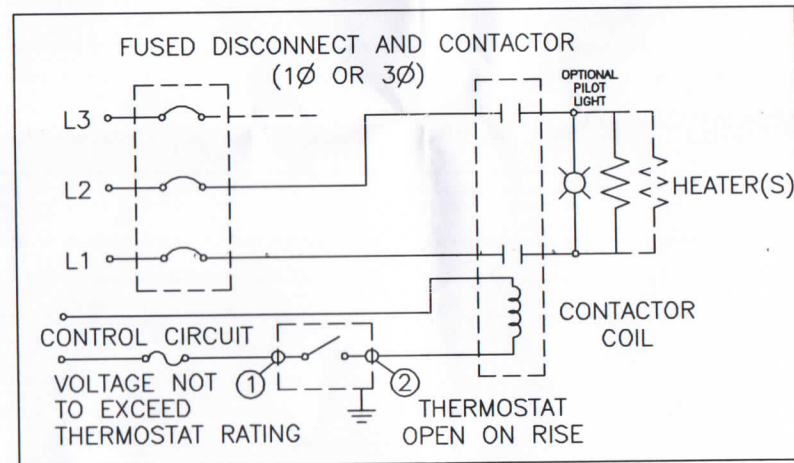
CAUTION IF IN DOUBT, CONSULT A PROFESSIONAL ELECTRICIAN OR CALL 800-323-6859.

NOTES:

1. SHAFT ROTATION IS CLOCKWISE TO INCREASE TEMPERATURE.
2. MAXIMUM AMBIENT EXPOSURE OF THERMOSTAT BODY PER TABLE.
3. MAXIMUM BULB EXPOSURE NOT TO EXCEED HIGH F RATING IN TABLE.
4. MOUNTING SCREWS NOT TO PENETRATE CASE MOUNTING HOLES GREATER THAN 0.2 IN. TORQUE 7-9 IN/LBS.
5. UL RECOGNIZED, CSA CERTIFIED.
6. WHEN INSTALLING TEMPERATURE SENSING BULB, AVOID BENDS OR KINKING OF THE CAPILLARY TUBE.

TST-	LOW F	HIGH F	MAX. BODY F	RATED V	RATED A	BULB LENGTH	BULB MAX. DIA.	CAPILLARY LENGTH	NOB
101-									
101	60	250	175	125/250	25	3	0.28	12	TST-104-101
103	150	560	180	125/250	25	7.2	0.21	36	TST-104-104
105	60	180	140	240/277	22/18	4.2	0.28	6	Screw Adj
106	47	107	175	125/240	25	2.85	0.322	8	TST-104-102
109	20	120	175	125/250	25	4.15	0.26	24	TST-104-105
111	60	250	175	125/250	25	3.35	0.26	70	TST-104-101
118	55	115	175	125/250	25	3.7	0.26	42	TST-104-102
119	40	107	175	125/250	25	5.88	0.265	6	TST-104-102
124	60	180	140	240/277	22/18	4.2	0.28	6	TST-104-102

CIRCUIT IF LINE VOLTAGE AND/OR CURRENT EXCEEDS THERMOSTAT RATING



ITEM	PART NO.	REQD	DESCRIPTION
<p>TEMPCO ELECTRIC HEATER CORPORATION</p> <p>607 N. Central Ave. Wood Dale, IL 60191-1452 U.S.A.</p> <p>Phone: (630) 350-2252 Fax: (630) 350-1210 Email: info@tempco-electric.com</p> <p>REV 9, 8/28/15 - GDS</p>			
<p>TOLERANCES UNLESS OTHERWISE SPECIFIED</p> <p>FRACTIONS ± 1/64</p> <p>DECIMALS .XX ± .010 .XXX ± .005</p> <p>ANGLES ± 1°</p> <p>SURFACE FINISH ✓</p>		SCALE:	DATE: 2/17/05
CUSTOMER: TEMPCO		DRAWN BY: CBK	CHECKED:
TITLE: STYLE D - SPST, T'STAT INSTR.		APPROVED:	
		DRAWING NUMBER: IDP-119-101	

ECO #	NO.	REVISION	DATE	BY
1	1	NOTE 1 NFPA WORKING REVISED SCHEMATIC CAPTIONS UPDATED	2/18/10	IA
2	2	DUAL VOLTS WORKING REVISED FACTORY WIRING NOTES ADDED	11/2/12	JWC

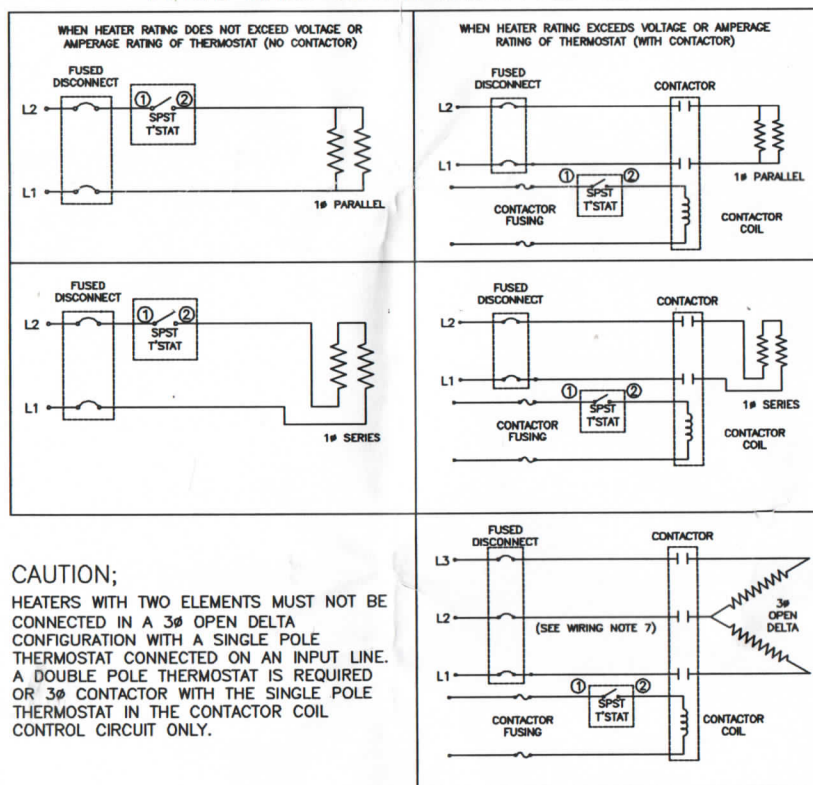
WIRING & INSTALLATION

1. ELECTRICAL WIRING TO HEATER MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC), NFPA 70/79, AND LOCAL CODES.
2. IF IN DOUBT, CONSULT A QUALIFIED ELECTRICIAN BEFORE WIRING OR FOR ASSISTANCE CALL TEMPCO AT 800-323-6859.
3. WHEN ELEMENT WATTAGES ARE NOT EQUAL, HEATERS MUST NOT BE CONNECTED IN SERIES.
4. ELECTRICAL WIRING TO HEATER SHOULD BE CONTAINED IN RIGID CONDUIT OR IN SEALED FLEXIBLE HOSE TO KEEP CORROSIVE VAPORS AND LIQUIDS OUT OF THE TERMINAL HOUSING. IF HIGH HUMIDITY IS ENCOUNTERED, THE CONDUIT SHOULD SLOPE DOWN AND AWAY FROM THE HEATER.
5. IF FLEXIBLE CORD IS EMPLOYED, A WATERTIGHT CONNECTOR SHOULD BE USED FOR ENTRY OF THE CORD INTO THE TERMINAL BOX. OUTDOOR APPLICATIONS REQUIRE LIQUID-TIGHT CONDUIT AND CONNECTORS.
6. BRING THE POWER LINE WIRES THROUGH THE OPENING IN THE TERMINAL BOX. CONNECT LINE WIRES AS SHOWN IN THE WIRING DIAGRAM.
7. IF WIRING 2 ELEMENT HEATER 3 ϕ OPEN DELTA, CENTER LEG (L2) WILL HAVE A LINE CURRENT OF 1.732 TIMES CURRENT IN OUTER (L1/L3) LEGS.

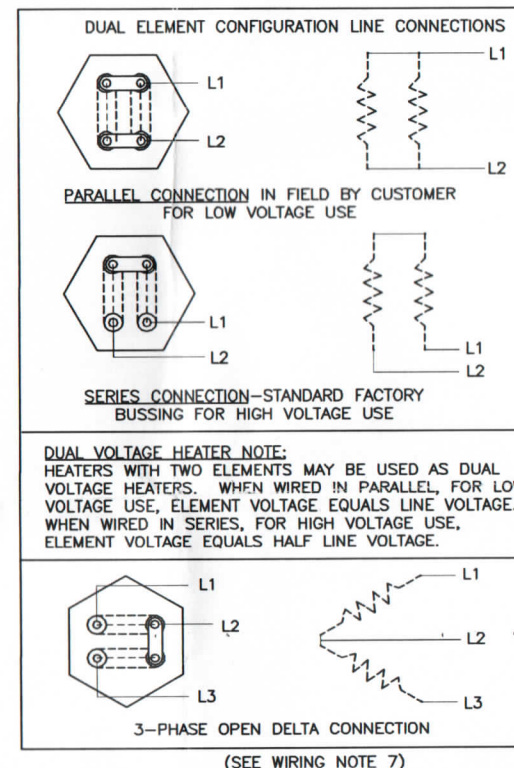
OPERATION & MAINTENANCE

1. DO NOT OPERATE HEATERS AT VOLTAGES IN EXCESS OF THAT STAMPED ON THE HEATER SINCE EXCESS VOLTAGE WILL SHORTEN HEATER LIFE.
2. ALWAYS MAINTAIN A MINIMUM OF 2" OF WATER OR LIQUID ABOVE THE HEATED PORTION OF THE ELEMENT TO PREVENT EXPOSURE OF THE EFFECTIVE HEATED LENGTH. IF THE HEATER IS NOT PROPERLY SUBMERGED, IT MAY OVERHEAT AND SHORTEN HEATER LIFE. DO NOT OPERATE HEATER IF DRY.
3. BE SURE ALL TRAPPED AIR IS REMOVED FROM A CLOSED TANK. BLEED THE AIR OUT OF THE LIQUID PIPING SYSTEM AND HEATER CHAMBER PRIOR TO ENERGIZING. NOTE: THE TANK OR HEATING CHAMBER IN CLOSED TANK SYSTEMS MUST BE KEPT FILLED WITH LIQUID AT ALL TIMES.
4. KEEP HEATING ELEMENTS ABOVE SEDIMENT DEPOSITS.

TYPICAL WIRING USING A SINGLE POLE THERMOSTAT



TYPICAL ELEMENT WIRING CONFIGURATIONS



OPERATION USING A THERMOSTAT

1. DO NOT USE A THERMOSTAT AS A POWER SWITCH. USE SOME OTHER MEANS OF DISCONNECTING POWER TO THE HEATER FOR SERVICING.
2. THERMOSTATS ARE NOT A FAIL-SAFE DEVICE. USE AN APPROVED HIGH TEMPERATURE LIMIT CONTROL AND/OR PRESSURE LIMIT CONTROL FOR SAFE OPERATION.
3. AVOID KINKING OR BENDING THE CAPILLARY TUBE TOO SHARPLY AS THIS WILL ALTER THE CALIBRATION AND/OR RENDER THE THERMOSTAT INOPERABLE. EXCESS CAPILLARY TUBE SHOULD BE COILED NEATLY IN JUNCTION BOX.
4. THE CAPILLARY TUBE MUST NEVER TOUCH THE THERMOSTAT CONTACTS AS THIS WILL CAUSE AN ELECTRICAL SHORT CAPABLE OF HARMING PERSONNEL AND/OR EQUIPMENT.
5. SEE SPECIFIC INSTRUCTION SHEET FOR SPST OR DPST THERMOSTAT MODEL.

LOW MEGOHM CONDITION

THE REFRACTORY MATERIAL USED IN ELECTRIC HEATERS MAY ABSORB MOISTURE DURING TRANSIT OR WHEN SUBJECT TO A HUMID ENVIRONMENT. THIS MOISTURE ABSORPTION RESULTS IN A COLD INSULATION RESISTANCE OF LESS THAN TWENTY MEGOHMS. NORMALLY, THIS MEGOHM VALUE CORRECTS ITSELF AFTER HEATUP AND DOES NOT AFFECT HEATER EFFICIENCY OR LIFE. A LOW MEGOHM CONDITION CAN EASILY BE CORRECTED BY REMOVING THE TERMINAL ENCLOSURE, THERMOSTAT AND TERMINAL HARDWARE AND BAKING THE HEATER IN AN OVEN AT 250° TO 300°F FOR SEVERAL HOURS, PREFERABLY OVERNIGHT. AN ALTERNATIVE PROCEDURE IS TO REMOVE THE THERMOSTAT AND ENERGIZE THE HEATERS AT LOW VOLTAGE UNTIL THE MEGOHM READING RETURNS TO NORMAL. WHEN ENERGIZING HEATERS IN AIR, THE SHEATH TEMPERATURES SHOULD NOT EXCEED 400°F FOR COPPER AND 750°F FOR STEEL OR INCOLOY ELEMENTS.

WARNING! HAZARD OF ELECTRIC SHOCK. ANY INSTALLATION INVOLVING ELECTRIC HEATERS MUST BE GROUNDED TO EARTH TO ELIMINATE SHOCK HAZARD.



TWO ELEMENT HEATERS ARE PREWIRED AT FACTORY IN SERIES (STANDARD) FOR HIGH VOLTAGE USE & BUSSING MUST BE REVISED IN FIELD TO PARALLEL CONNECTION FOR LOW VOLTAGE USE.

ITEM	PART NO.	RECD	DESCRIPTION
1	SCREW PLUG WIRING INSTRUCTIONS 2 ELEMENTS W/ SINGLE-POLE T'STAT		Tempco Electric Heater Corporation 807 E. Central Ave. Bartlett, IL 60010-1000 Phone (815) 399-1200 Fax (815) 399-1200 Email: info@tempco.com
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