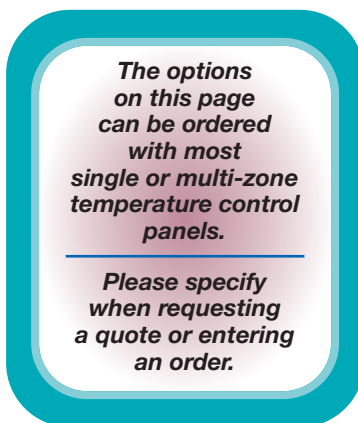


### Custom Temperature Control Panels — Typical Options

- 1. Pre-wired outlets for heater power** Female twist lock style panel mount connectors and male plugs can be added to the exterior of the enclosure for circuits of 480 VAC and 30 Amp and under.
- 2. Pre-wired panel jacks for temperature sensors** Female panel mount jack connectors and plugs can be added to the exterior of the enclosure.
- 3. Other standard voltages** such as 208, 380, 415, 575 or 600 VAC — Special single or three-phase systems can be manufactured to customer requirements.
- 4. Current meter, single phase** A current transformer and a door-mounted analog or digital meter reads the average load current.
- 5. Current meter, three phase** A set of three current transformers, a door-mounted analog or digital meter and a four-position switch allows the customer to read the average load current on all three phases.
- 6. Voltage meter, single phase** A door-mounted analog or digital meter reads the voltage applied to the main input of the control panel.
- 7. Voltage meter, three phase** A door-mounted analog or digital meter and a four-position switch allows the customer to read the voltage applied to the main input on all three phases.
- 8. Optional controls** The standard 1/16th DIN control can be replaced by 1/8 or 1/4 DIN size controls.
- 9. Base—Load—Controller** When used with a zero-fired SCR Power Controller, a base-load-controller can help eliminate light flicker normally associated with large zero-fired loads. High harmonics and low power factor caused by large phase-fired loads can also be improved using a base-load-controller.
- 10. Heater power lamp** Door-mounted pilot lamp gives an indication of applied heater power.
- 11. Circuit breaker instead of main fused disconnect** Replaces the standard fused disconnect with a circuit breaker to provide automatic overcurrent protection.
- 12. Individual sub-circuit circuit breakers instead of fusing** Replaces the standard sub-circuit fusing with internally mounted circuit breakers.
- 13. Annunciation, audible horn** Provides for an audible horn to sound based on the temperature control's alarm condition. An acknowledge pushbutton switch is included. The horn would be mounted on the exterior of the enclosure.
- 14. Annunciation, flashing beacon** Provides for a flashing light to turn on based on the temperature control's alarm condition. An acknowledge pushbutton switch is included. The beacon would be mounted on the exterior of the enclosure.
- 15. Enclosure heater for outdoor use** A silicone rubber heater with thermostat or ceramic bulb enclosure heater to prevent freeze and condensation protection is mounted inside the enclosure. It would be properly sized for the enclosure used.



- 16. Mechanical cooling** For control systems that are used in hot environments or require complete enclosure sealing, active or passive cooling can be incorporated into the control panel. This includes cooling fans, air conditioners or vortex cooling.
- 17. Integral liquid level controls** Basic one-level liquid level controls can be incorporated into the safety contactor circuit to turn off the heater if the tank reaches a dangerously low level. Multi-level liquid level switch systems can be incorporated to provide pump or valve controls to maintain required levels.
- 18. Chart recorder** A PPR type data logger recorder (see page 12-2) can be mounted in the door to provide historical data records of the process being controlled.
- 19. Special paint** The enclosure can be custom painted to provide environmental protection or a unique color.
- 20. Tagging internal parts** Engraved phenolic tags can be added to the subpanel to identify components as depicted on the drawings provided. The tags will be attached to the subpanel near the identified part.
- 21. Utility outlet** 120 VAC for maintenance instruments, powered externally or internally. If powered internally, limited to 2 Amps.
- 22. Internal lighting package** A useful option for routine maintenance or troubleshooting.
- 23. Floor stand kit** This option provides a 12" stand kit for any wall-mounted enclosure, making it a free-standing floor model.
- 24. Enclosure mechanical options** Miscellaneous options such as a drip or solar shield can be added to the enclosure.

- 25. Approval drawings** This option is for when the customer requires approval drawings prior to release for manufacturing. (Standard documents are normally shipped with each control panel). With this option, Tempco will provide a copy of the proposed general layout drawing and electrical schematic for customer approval. The production process would not begin until after the *approval drawings* are signed and returned to Tempco.
- 26. HMI Operator Interface** Operator Interface touch screens are available and come pre-programmed by our engineers. A detailed description must be provided by the customer if a custom layout of the HMI is required. Otherwise, general controls and indicators will be included. Works well with or without a PLC option. Available in 4 full color sizes: 4.3", 7", 10" & 15". Built-in paperless data logger included.
- 27. PLC Automation/Process Control** If complex automation is needed, a PLC may be necessary. The PLC will be pre-programmed in-house by our engineering staff. As with the HMI option, a detailed description is required of the customer as to the specifics of the PLC program. Interfaces very well with our HMI option.

**Please Consult Tempco if the Option You Require is Not Listed.**