Temperature Controls
Power Supplies

CONTROLS
BEHIND PANEL

CONTROLLERS
THROUGH PANEL, 1/32 DIN

TC-3400 page 134
PID Controller

TC-1F page 138
For cool and heat/cool air conditioners
single set point
120/240 VAC; 12/24/48 VDC

TC-3F page 138
For heat/cool air conditioners
two preset setting 35C and 15C
120/240 VAC; 12/24 VDC

SWITCHES
TEMPERATURE SWITCHES AND RELAYS

ACCESSORIES
TC ACCESSORIES, POWER SUPPLIES

Relay Packs page 139
Single, Dual and Quad relay packs for cool only, heat/cool and reverse polarity applications

Sensors page 140
Thermocouples, RTD’s and probes
TC-4600 page 132
PWM Controller

TC-3500 page 136
PID Controller

TC-6F page 138
For cool only air conditioners
three preset setting 35C, 25C
& continuous
120/240 VAC, 12/24/48 VDC

TC-7F page 138
For Heat/cool air conditioners
two preset setting 35C, 10C
& 20C heat exchanger mode
24 VDC

Comms page 140
RS-232 board, USB-RS232
converter, comms cable

Power Supplies
page 141
Switching power supplies
TC-4600
Temperature Controller

PWM Temperature Control
RS-232 Comms.

OVERVIEW

The TC-4600 is a bi-directional (heat/cool), H-bridge controller designed to control
thermoelectric cooling/heating units with the option to set as unidirectional. The controller
accepts an input voltage of 12-36VDC. The output voltage can range from 0 to 36VDC if a
split supply is used. The load circuit is pulse width modulated at 2.7KHz and delivers a load
of 0.1 to 25 Amps. Temperature resolution for this controller is 0.01°C, providing exceptional
control stability in a well designed thermal system.

The H-bridge configuration allows for a seamless transition between heating and cooling.
Using a PC with an RS232 interface, the controller can be set for any of the following
control configurations: On/Off control, differential temperature control, manual control or any
combination of PID control. The user friendly software requires no programming experience
to set up the controller. The RS232 interface has 1500 VAC isolation from all the electronic
circuitry minimizing the interference from noise or errant signals. Once the controller is set
up, the computer may be disconnected and the controller becomes a stand alone unit. If the
computer is left connected, it can be used for data acquisition in a half duplex mode.

The temperature may also be set through the optional display or through a remote
potentiometer. The PC software also provides for several alarm types and the controller has 3
ou puts for alarms with a 5VDC output rated for 25mA of current. In the set up menu the
alarm function may be set as no alarm, tracking alarm, fixed value alarm or computer
controlled alarm. The menu also offers selections for latching and for maintaining or cutting
the power during an alarm. The alarm sensor may be by the control temperature sensor or a
secondary sensor.

FEATURES

- Full H-Bridge Control
- Fully PC Programmable
- P, I, D or On/Off Control
- PC Configurable Alarm Circuit
- 0-36VDC Output Using Split Power Supply
- RS232 Communication Port
- RoHS Compliant
- Set Temperature range of -40°C to 250°C dependent on sensor selection

ACCESSORIES

- Model TC-4600D Display: 4 Digit temperature readout for displaying set
temperature or actual temperature with capability to adjust the set
temperature.
- HS optional Heat Sink: Recommended for applications using 15A of load
or greater.
- Thermistor-K: 2000 Ω +/- 2% at 25 °C, best for (-20 °C to 30 °C) range
- Thermistor-Z: 10000 Ω +/- 2% at 25 °C, best for (0 °C to 50 °C) range

SPECIFICATIONS

- Input Voltage: 12VDC to 36VDC
- Output Voltage: 0 to 36VDC with split supply
- Load Current: 0.1A to 25A
- Bandwidth: 0.1°C to 50°C
- Integral: 0 to 100 repeats per minute
- Derivative: 0 to 10 minutes
- PWM Base Frequency: 2.7 KHz
- Ambient Temperature range: -20°C to 70°C
- Power Dissipation: <10 Watts
- Process Control Rate: 90 times per second
- Output Power Resolution: ±0.2%

PART NUMBER AND ORDERING

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>OPERATING VOLTAGE VDC</th>
<th>SWITCHING VOLTAGE VDC</th>
<th>MAX. CURRENT AMPS.</th>
<th>HEAT SINK</th>
<th>SENSOR</th>
<th>SENSOR RANGE (°C)</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC-4600</td>
<td>12-36</td>
<td>0-36</td>
<td>15*</td>
<td>none</td>
<td>Thermistor-K</td>
<td>-20 to 30</td>
<td>none</td>
</tr>
<tr>
<td>TC-4600</td>
<td>12-36</td>
<td>0-36</td>
<td>15*</td>
<td>none</td>
<td>Thermistor-K</td>
<td>-20 to 30</td>
<td>included</td>
</tr>
<tr>
<td>TC-4600</td>
<td>12-36</td>
<td>0-36</td>
<td>15*</td>
<td>none</td>
<td>Thermistor-Z</td>
<td>0 to 50</td>
<td>none</td>
</tr>
<tr>
<td>TC-4600</td>
<td>12-36</td>
<td>0-36</td>
<td>15*</td>
<td>none</td>
<td>Thermistor-Z</td>
<td>0 to 50</td>
<td>included</td>
</tr>
<tr>
<td>TC-4600</td>
<td>12-36</td>
<td>0-36</td>
<td>15*</td>
<td>none</td>
<td>Thermistor-Z</td>
<td>0 to 50</td>
<td>included</td>
</tr>
<tr>
<td>TC-4600</td>
<td>12-36</td>
<td>0-36</td>
<td>25</td>
<td>included</td>
<td>Thermistor-K</td>
<td>-20 to 30</td>
<td>none</td>
</tr>
<tr>
<td>TC-4600</td>
<td>12-36</td>
<td>0-36</td>
<td>25</td>
<td>included</td>
<td>Thermistor-K</td>
<td>-20 to 30</td>
<td>included</td>
</tr>
<tr>
<td>TC-4600</td>
<td>12-36</td>
<td>0-36</td>
<td>25</td>
<td>included</td>
<td>Thermistor-Z</td>
<td>0 to 50</td>
<td>none</td>
</tr>
<tr>
<td>TC-4600</td>
<td>12-36</td>
<td>0-36</td>
<td>25</td>
<td>included</td>
<td>Thermistor-Z</td>
<td>0 to 50</td>
<td>included</td>
</tr>
</tbody>
</table>

* Can switch up to 25 AMPS if used with heat sink
DIMENSIONS

Mounting Without Heat Sink

0.97 [25] - 2.00 [51]
3.70 [94] Max.
1.47 [37]

5.18 [132] - 2.25 [57]

Mounting With Heat Sink

(4) 6-32 Threaded Inserts
0.188 [4.8] Max Depth.

4.88 [124] - 9.00 [229]
(4) 10-32 Threaded Holes

Controller Board
Heat Sink

Dimensions: Inches [Millimeters]
TC-3400 Temperature Controller

OVERVIEW
The TC-3400 temperature controller series simplifies your temperature control requirements.

FEATURERS
Advanced PID Control Algorithm
- Offers TRU-Tune TM + adaptive control to provide tighter control for demanding applications
- Provides auto-tune for fast, efficient start up

Configuration
- Systems come preconfigured for PID cooling application
- "Canned" configuration for different applications available

Parameter Save and Restore Memory
- Reduce service requirement and down time

Heat-Cool Operation
- Provides application flexibility with accurate temperature and process control

P3T Armor Sealing System
- NEMA-4X and IP66 offers water and dust resistance that can be cleaned and washed down
- Backed up by UL 50 independent certification to NEMA-4X specification

SPECIFICATIONS
Line Voltage/Power:
- 85 to 264V–(ac), 47 to 63Hz
- 12 to 40Vdc OR 20 to 28V–(ac), +10/-15 percent; 50/60Hz, ±5 percent
- 10VA maximum power consumption
- Data retention upon power failure via nonvolatile memory
- Compliant with SEMI F47-0200, Figure R1-1 voltage sag requirements @ 24V–(ac) or higher

Environment:
- -18 to 65°C (0-149°F) operating temperature
- -40 to 85°C (-40-185°F) storage temperature
- 0 to 90 percent RH, non-condensing

Accuracy:
- Calibration accuracy and sensor conformity ±0.1 percent of span, ±1°C @ the calibrated ambient temperature and rated line voltage
- Types R, S B; 0.2 percent
- Type T below -50°C; 0.2 percent
- Calibration ambient temperature @ 25°C ±3°C (77°F±5°F)
- Accuracy span 540°C (1000°F) minimum
- Temperature stability ±0.1°C/°C (±0.1°F/°F) rise in ambient maximum

Agency Approvals:
- UL®/EN 61010 Listed
- UL® 1604 Class 1 div. 2
- UL® 50, NEMA 4X, EN 60529 IP66
- CSA 610110 CE
- RoHS, W.E.E.E.

Controller:
- Auto-tune with TRU-TUNE TM + adaptive control algorithm
- Control sampling rates: input 10Hz, outputs 10Hz

Wiring Termination:
- Input, power and controller output terminals are touch safe removable 12 to 22 AWG

Universal Input:
- Thermocouple, grounded or ungrounded sensors >20MΩ input impedance
- 3µA open sensor detection
- Maximum of 200Ω source resistance
- RTD 2- or 3-wire, platinum, 100Ω and 1000Ω @ 0°C calibration to DIN curve (0.00385Ω/°C)

Serial Communications:
- Isolated communications
- EIA 485, Modbus® RTU
**PID Temperature Controller**

**TC-3400**

### PART NUMBER AND ORDERING

```
34 - x x x - x x - x x x
```

**Input voltage**
- 0: Universal AC - 85 to 264Vac, 47 to 63 Hz
- 4: 12/24Vac - 12 to 40Vac, 20 to 28Vac

**Functions**
- 2: Heat/Cool - No relay
- 3: Cooling with relay (package defined below)
- 4: Heating/Cooling with relays (package defined below)

**Switching Volts & Amps**
- A: None, drive signal only - no relays
- B: Cool only, VAC switching, 120/240Vac, 10 Amps
- C: Cool Only, VDC switching, 0-100 VDC, 12 Amps
- D: Cool Only, VDC switching, 0-100 VDC, 20 Amps
- E: Cool Only, VDC switching, 0-100 VDC, 40 Amps
- F: Heat/Cool, VDC switching, 0-100 VDC, 12 Amps
- G: Heat/Cool, VDC switching, 0-100 VDC, 20 Amps
- H: Heat/Cool, VDC switching, 0-100 VDC, 40 Amps
- I: Heat/Cool, Heat: 120/240 Vac, 10 amps Cool: VDC switching, 0-100 VDC, 12 Amps
- J: Heat/Cool, Heat: 120/240 Vac, 10 amps Cool: VDC switching, 0-100 VDC, 20 Amps
- K: Heat/Cool, Heat: 120/240 Vac, 10 amps Cool: VDC switching, 0-100 VDC, 40 Amps
- L: Heat/Cool, Heat: 120/240 Vac, 10 amps Cool: VDC switching, 120/240 Vac, 10 amps
- M: Heat/Cool, Reverse Polarity, 0-100 VDC, 12 Amps
- N: Heat/Cool, Reverse Polarity, 0-100 VDC, 20 Amps
- O: Heat/Cool, Reverse Polarity, 0-100 VDC, 40 Amps
- P: Heat/Cool, VAC switching, 120/240 Vac, 10 amps
- Q: Heat/Cool, VAC switching, 120/240 Vac, 20 amps
- R: Heat/Cool, VAC switching, 120/240 Vac, 40 amps

**Sensor**
- 0: None
- 1: 3-Wire RTD - RTD-Probe
- 2: 1 type thermocouple (ring mount)

**Communications**
- 0: Basic communications used with standard EZ Zone Configurator allows the user to configure all the set up parameters including the ability to change set point, monitor the process temperature and initiate an Auto Tune
- 1: RS-232 complete communication for use with standard EZ Zone Configurator and optional SpecView or third party software, includes RS-232/RS-485 adapter
- 2: RS-485 complete communication for use with standard EZ Zone Configurator and optional SpecView or third party software

**Options**

---

**DIMENSIONS AND CUTOUT**

![Dimensions and Cutout Diagram]

---

1-888-TECA-USA (832-2872)
**OVERVIEW**

The TC-3500 temperature controller series simplifies your temperature control requirements.

This controller reduces system complexity and set up cost. The TC-3500 is a high performance PID temperature controller in space-saving, panel-mount size. RS485 with MODBUS-RTU (JBUS) protocol and IP 65 mounted in panel with gasket suitable for wide range of environments.

For use with reverse polarity AHP-300FFHC, AHP-300XEHC, AHP-300XHC (page 38), AHP-150FFHC, AHP-150XEHC (page 40) air conditioners and AHP-300CPHC, AHP-150CPHC (page 78) cold plates.

**SPECIFICATIONS**

**Mechanical Data:**
- Housing Self-extinguishing plastic, UL 94 V0
- Dimensions 35x78 mm - depth 75,5 mm
- Weight 130 g approx
- Connections 2,5 mm2 screw terminal block
- Mounting Flush in panel in 29x71 mm hole
- Front panel protection IP 65 mounted in panel with gasket

**Electrical Data:**
- Power supply 12…24 VDC +/- 10
- Power consumption 4 VA approx.

**Input Sensor:**
- PTC Thermistor (included)

**Functional Data:**
- Control PID double action
- PID functions AUTO TUNING FAST, SELF TUNING, FUZZY OVERSHOOT CONTROL
- Multi Set Point Up to 4 programmable Set Points
- Overall accuracy +/-0,5% full scale (TC S :+/- 1% fs)
- Unit of measurement °C / °F, programmable
- Max. cold junction compensation drift 0,1°C/°C with operating temperature 0…50°C after warm-up time of 20 min.
- Sampling rate 8 sample per second
- Serial communication RS485 with MODBUS-RTU (JBUS) protocol
- Communication rate 1200…38400 baud, programmable
- Display 4 red digit h=12 mm
- Parameters access Protected by password
- Operating temperature 0…50°C
- Operating humidity 30…95 RH% without condensation
### PART NUMBER AND ORDERING

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>PART NUMBER</th>
<th>SWITCHING VOLTAGE</th>
<th>SWITCHING CURRENT</th>
<th>COMMUNICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC-3500</td>
<td>35-44S-30-000</td>
<td>12/24</td>
<td>7</td>
<td>None</td>
</tr>
<tr>
<td>TC-3500</td>
<td>35-44S-32-000</td>
<td>12/24</td>
<td>7</td>
<td>RS-485</td>
</tr>
</tbody>
</table>

### DIMENSIONS AND CUTOUT

[Dimensions Diagram]

Dimensions: Inches [Millimeters]
Power Temperature Controllers

TC-1C AND TC-1H POWER TEMPERATURE SWITCHES

Models TC-1C and TC-1H power temperature controllers, with their small tolerance and reset differential, are the simplest and most cost effective way to control a cooling or heating device (VAC or VDC) without a need for a relay. For circuits that have higher current draw simply use them in conjunction with a solid state relay.

Part Numbers:

<table>
<thead>
<tr>
<th>Mode</th>
<th>Part Number</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cool</td>
<td>TC-1C-XX</td>
<td>switch closes on temperature rise</td>
</tr>
<tr>
<td>Heat</td>
<td>TC-1H-XX</td>
<td>switch closes on temperature drop</td>
</tr>
</tbody>
</table>

XX: Specify temperatures 20 °C, 25 °C, 30 °C, 35 °C for cool mode and 10 °C, 15 °C for heat mode

Example: TC-1C-20 and TC-1H-10

TC-6F SPECIFICATION

<table>
<thead>
<tr>
<th>MODEL</th>
<th>PART NUMBER</th>
<th>NOTES</th>
<th>TEMP @ T1 °C</th>
<th>TEMP @ T2 °C</th>
<th>T1-T2 (MAX) °C</th>
<th>RESET (TYP) °C</th>
<th>RESET °C</th>
<th>TEMP @ T3 °C</th>
<th>OPERATING VOLTAGE</th>
<th>SWITCHING VOLTAGE</th>
<th>SWITCHING CURRENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC-6F</td>
<td>6F-00A-0000</td>
<td>No Relay</td>
<td>35 +/- 5</td>
<td>25 +/- 5</td>
<td>10 +/- 3</td>
<td>6.5</td>
<td>3</td>
<td>Continuous On</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>TC-6F-AC</td>
<td>6F-04T-0000</td>
<td>VAC Version</td>
<td>35 +/- 5</td>
<td>25 +/- 5</td>
<td>10 +/- 3</td>
<td>6.5</td>
<td>3</td>
<td>Continuous On</td>
<td>85-250 VAC</td>
<td>24-280 VAC</td>
<td>10</td>
</tr>
<tr>
<td>TC-6F-DC</td>
<td>6F-44D-0000</td>
<td>12/24 VDC</td>
<td>35 +/- 5</td>
<td>25 +/- 5</td>
<td>10 +/- 3</td>
<td>6.5</td>
<td>3</td>
<td>Continuous On</td>
<td>3.5-32 VDC</td>
<td>0-100 VDC</td>
<td>.02-20 ADC</td>
</tr>
<tr>
<td>TC-6F-DC*</td>
<td>6F-44P-0000</td>
<td>12/24 VDC</td>
<td>35 +/- 5</td>
<td>25 +/- 5</td>
<td>10 +/- 3</td>
<td>6.5</td>
<td>3</td>
<td>Continuous On</td>
<td>3.5-32 VDC</td>
<td>0-100 VDC</td>
<td>.02-20 ADC</td>
</tr>
</tbody>
</table>

*H-Bridge relays included

TC-6F COOL ONLY

Model TC-6F (Cool Only) thermostat is designed using two temperature power switches in conjunction with a solid state relay. A three position switch is provided to adjust temperature settings.

TC-3F HEAT AND COOL

Model TC-3F (Heat/Cool) thermostat incorporates the same technology as the TC-6F. It contains a single setting each for both heating and cooling as referenced below:

TC-3F SPECIFICATION

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>PART NUMBER</th>
<th>NOTES</th>
<th>COOL TEMP. °C</th>
<th>HEAT TEMP. °C</th>
<th>RESET (MAX) °C</th>
<th>RESET (TYP) °C</th>
<th>OPERATING VOLTAGE</th>
<th>SWITCHING VOLTAGE</th>
<th>SWITCHING CURRENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC-3F-AC</td>
<td>3F-00R-0000</td>
<td>VAC Version</td>
<td>35 +/- 5</td>
<td>15 +/- 5</td>
<td>6.5</td>
<td>3</td>
<td>85-250 VAC</td>
<td>24-280 VAC</td>
<td>10 AMPs</td>
</tr>
<tr>
<td>TC-3F-DC</td>
<td>3F-04G-0000</td>
<td>12/24 VDC</td>
<td>35 +/- 5</td>
<td>15 +/- 5</td>
<td>6.5</td>
<td>3</td>
<td>3.5-32 VDC</td>
<td>0-100 VDC</td>
<td>.02 - 20 ADC</td>
</tr>
<tr>
<td>TC-3F-DC*</td>
<td>3F-04P-0000</td>
<td>12/24 VDC</td>
<td>35 +/- 5</td>
<td>15 +/- 5</td>
<td>6.5</td>
<td>3</td>
<td>3.5-32 VDC</td>
<td>0-100 VDC</td>
<td>.02 - 20 ADC</td>
</tr>
</tbody>
</table>

*H-Bridge relays included

TC-7F HEAT AND COOL

Model TC-7F (Heat/Cool) thermostat incorporates the same technology as the TC-6F. It contains a single setting each for both heating and cooling and a heat exchanger mode:

TC-7F SPECIFICATION

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>PART NUMBER</th>
<th>NOTES</th>
<th>HX TEMP. °C</th>
<th>COOL TEMP. °C</th>
<th>HEAT TEMP. °C</th>
<th>RESET (MAX) °C</th>
<th>RESET (TYP) °C</th>
<th>OPERATING VOLTAGE</th>
<th>SWITCHING VOLTAGE</th>
<th>SWITCHING CURRENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC-7F-DC</td>
<td>7F-04G-0000</td>
<td>24 VDC</td>
<td>20 +/- 3</td>
<td>35 +/- 3</td>
<td>10 +/- 3</td>
<td>6.5</td>
<td>3</td>
<td>24 VDC</td>
<td>24 VDC</td>
<td>.02 - 20 ADC</td>
</tr>
</tbody>
</table>

*H-Bridge relays included
SOLID STATE RELAYS

**RELAYS**

**Single Relay**

- **Cool only, DC Drive, VAC switching, 120/240 VAC, 10 AMPS**
  - Part #: RELAY - B

- **Cool only, DC Drive, VDC switching, 0-100 VDC, 12 AMPS**
  - Part #: RELAY - C

- **Cool only, DC Drive, VDC switching, 0-100 VDC, 20 AMPS**
  - Part #: RELAY - D

- **Cool only, DC Drive, VDC switching, 0-100 VDC, 40 AMPS**
  - Part #: RELAY - E

- **Cool only AC Drive, VAC switching, 0-100 VDC, 10 AMPS**
  - Part #: RELAY - T

**Dual Relay**

- **Heat/Cool, VDC switching, 0-100 VDC, 12 AMPS**
  - Part #: RELAY - F

- **Heat/Cool, VDC switching, 0-100 VDC, 20 AMPS**
  - Part #: RELAY - G

- **Heat/Cool, Heat: 120/240 VAC, 10 AMPS**
  - Cool: 0-100 VDC, 12 AMPS
  - Part #: RELAY - I

- **Heat/Cool, Heat: 120/240 VAC, 10 AMPS**
  - Cool: 0-100 VDC, 20 AMPS
  - Part #: RELAY - J

- **Heat/Cool, Heat: 120/240 VAC, 10 AMPS**
  - Cool: 0-100 VDC, 40 AMPS
  - Part #: RELAY - K

- **Heat/Cool, Heat: 0-100 VDC, 12 AMPS**
  - Cool: 120/240 VAC, 10 AMPS
  - Part #: RELAY - L

- **Heat/Cool, Heat: 0-100 VDC, 20 AMPS**
  - Cool: 120/240 VAC, 10 AMPS
  - Part #: RELAY - M

- **Heat/Cool, Heat: 0-100 VDC, 40 AMPS**
  - Cool: 120/240 VAC, 10 AMPS
  - Part #: RELAY - N

- **Heat/Cool, VAC switching, 120/240 VAC, 10 AMPS**
  - Part #: RELAY - R

**Quad (H-Bridge)**

- **Heat/Cool, reverse polarity, 0-100 VDC, 12 AMPS**
  - Part #: RELAY - O

- **Heat/Cool, reverse polarity, 0-100 VDC, 20 AMPS**
  - Part #: RELAY - P

- **Heat/Cool, reverse polarity, 0-100 VDC, 40 AMPS**
  - Part #: RELAY - Q
## Accessories

### SENSORS, CABLES, ADAPTERS

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RTD-Surface</strong></td>
<td>Surface mounting 3 wire RTD with connector</td>
</tr>
<tr>
<td><strong>RTD-Probe</strong></td>
<td>6” long, 1/8 DIA, 3 wire RTD with connector</td>
</tr>
<tr>
<td><strong>Probe-1/4NPT</strong></td>
<td>RTD-Probe with male 1/4 NPT compression fitting</td>
</tr>
<tr>
<td><strong>Probe-3/8NPT</strong></td>
<td>RTD-Probe with male 3/8 NPT compression fitting</td>
</tr>
<tr>
<td><strong>Thermocouple Wire</strong></td>
<td>(specify length in feet)</td>
</tr>
<tr>
<td>“T” type</td>
<td>WIRE-T-XXX</td>
</tr>
<tr>
<td>“J” type</td>
<td>WIRE-J-XXX</td>
</tr>
<tr>
<td><strong>RTD Wire</strong></td>
<td>(specify length in feet) 3 conductor cable</td>
</tr>
<tr>
<td></td>
<td>WIRE-RTD-XXX</td>
</tr>
<tr>
<td><strong>C-USB</strong></td>
<td>RS-232 to USB converter</td>
</tr>
<tr>
<td><strong>C-485/232</strong></td>
<td>RS-485 to RS-232 and RS-232 to RS-485 converter</td>
</tr>
<tr>
<td><strong>C-RS232</strong></td>
<td>RS-232 cable</td>
</tr>
</tbody>
</table>
## SPECIFICATION

<table>
<thead>
<tr>
<th>MODEL</th>
<th>INPUT VOLTAGE VAC 47-63 HZ</th>
<th>OUTPUT VOLTAGE VDC</th>
<th>DC OUTPUT POWER WATS</th>
<th>OUTPUT CURRENT AMPS</th>
<th>WEIGHT LBS</th>
<th>TEMPERATURE °C</th>
<th>WORKING DIMENSIONS L X W X H INCHES</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS150F-12</td>
<td>88-132 OR 176-264*</td>
<td>12</td>
<td>150</td>
<td>12.5</td>
<td>1.76</td>
<td>-10 - 60</td>
<td>7.96X4.4X2</td>
</tr>
<tr>
<td>AS150F-24</td>
<td>88-132 OR 176-264*</td>
<td>24</td>
<td>150</td>
<td>6.5</td>
<td>1.76</td>
<td>-10 - 60</td>
<td>7.96X4.4X2</td>
</tr>
<tr>
<td>SP300-12</td>
<td>90-264</td>
<td>12</td>
<td>300</td>
<td>24</td>
<td>2.6</td>
<td>-10 - 50</td>
<td>8.6X4.6X2</td>
</tr>
<tr>
<td>SP300-24</td>
<td>90-264</td>
<td>24</td>
<td>300</td>
<td>12.5</td>
<td>2.6</td>
<td>-10 - 50</td>
<td>8.6X4.6X2</td>
</tr>
<tr>
<td>SP500-24</td>
<td>90-264</td>
<td>24</td>
<td>500</td>
<td>20.8</td>
<td>3.3</td>
<td>0 - 70</td>
<td>9.2X4.25X2.5</td>
</tr>
<tr>
<td>SP800-24</td>
<td>90-264</td>
<td>24</td>
<td>800</td>
<td>33</td>
<td>3.3</td>
<td>0 - 70</td>
<td>9.2X4.25X2.5</td>
</tr>
</tbody>
</table>

* Input voltage range is switch selectable.

## DIMENSIONS

### AS-150F

![AS-150F Dimensions](image1)

- Dimensions: Inches [Millimeters]

### SP-300

![SP-300 Dimensions](image2)

- Dimensions: Inches [Millimeters]

### SP-500, SP-800

![SP-500, SP-800 Dimensions](image3)

- Dimensions: Inches [Millimeters]

---

**TECA | 141**