

TC-3400 Temperature Controller

PID Temperature Control

OVERVIEW

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

The controller options reduce system complexity and the cost of control loop ownership. The TC-3400 is a high performance PID temperature controller in space-saving, panel-mount 1/32 DIN size EIA 485 communications and standard NEMA-4X IP66 sealing make the TC-3400 versatile and suitable for wide range of environments.

FEATURES

Advanced PID Control Algorithm

- Offers TRU-Tune™ + 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

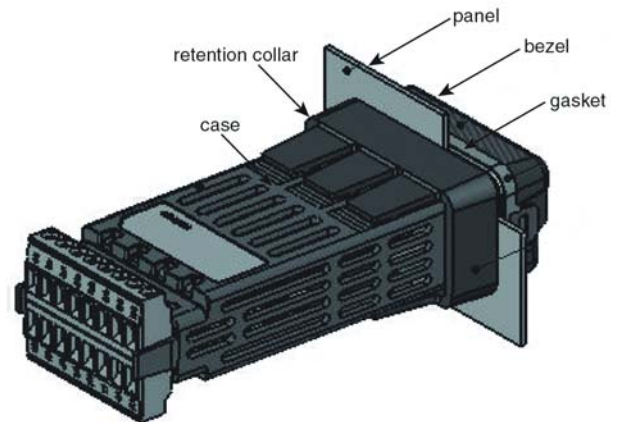
- Reduce service requirement and down time

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, $\pm 1^\circ\text{C}$ @ 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 @ $25^\circ\text{C} \pm 3^\circ\text{C}$ ($77^\circ\text{F} \pm 5^\circ\text{F}$)
- Accuracy span 540°C (1000°F) minimum
- Temperature stability $\pm 0.1^\circ\text{C}/^\circ\text{C}$ ($\pm 0.1^\circ\text{F}/^\circ\text{F}$) 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™ + 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 $> 20\text{M}\Omega$ input impedance $3\mu\text{A}$ open sensor detection Maximum of 200Ω source resistance
- RTD 2- or 3-wire, platinum, 100Ω and 1000Ω @ 0°C calibration to DIN curve ($0.00385\Omega / \Omega/^\circ\text{C}$)

Serial Communications:

- Isolated communications EIA 485
- Industry standard RS-485 Modbus® RTU
- RS-232 via RS-485/232 converter

PART NUMBER AND ORDERING

34	-	X	X	X	-	X	X	-	X	X	X
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Input voltage

- 0: Universal AC - 85 to 264Vac, 47 to 63 Hz
- 4: 12/24Vdc - 12 to 40Vdc, 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: 0-100 VDC, 12 Amps Cool: VAC switching, 120/240 VAC, 10 amps
- M: Heat/Cool, Heat: 0-100 VDC, 20 Amps Cool: VAC switching, 120/240 VAC, 10 amps
- N: Heat/Cool, Heat: 0-100 VDC, 40 Amps Cool: VAC switching, 120/240 VAC, 10 amps
- O: Heat/Cool, Reverse Polarity, 0-100 VDC, 12 Amps
- P: Heat/Cool, Reverse Polarity, 0-100 VDC, 20 Amps
- Q: Heat/Cool, Reverse Polarity, 0-100 VDC, 40 Amps
- R: Heat/Cool, VAC switching, 120/240 VAC, 10 amps

Sensor

- 0: None
- 1: 3-Wire RTD - RTD-Probe
- 2: T 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

