PRODUCT CATALOG

ZYTROL®

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ENCLOSED - DUAL SURFACE/DIN RAIL MTG

Series 120L Temperature Limit Controller

PRODUCT HIGHLIGHTS

DESCRIPTION
Low cost Temperature Limit Control with dual surface and DIN rail mtg enclosure.

SENSOR OPTIONS
Thermocouple or RTD

CONTROL MODES
On-Off latching with manual or automatic reset

OUTPUT OPTIONS
SPDT Relay or 24VDC SSR driver

FEATURES
Compact surface & DIN rail mtg; touch safe field wiring terminals; local SP adj.; LED trip indicator; local & remote reset; UL/CUL/FM/RoHS.

APPLICATIONS
Packaging Machines
Commercial Appliances
Furnaces
Water Heaters
Commercial Dryers
Temperature Baths

CONTROL TYPE
Temperature Limit

PACKAGING
Enclosed

MOUNTINGS
Dual Surface/DIN Rail Mtg

SIZE
3.30”W x 2.53”L x 2.75”H

DETAILED SPECIFICATIONS

INPUT VOLTAGE
115VAC ±15%, 50/60Hz, 3VA Max.
230VAC ±15%, 50/60Hz, 3VA Max.
24VAC ±15%, 50/60Hz, 3VA Max.
24VDC ±15%

CONTROL OUTPUT
SPDT Relay rated 3.8(1.5) Amps Res. & 1.5(.8) Amps Pilot Duty 120(240)VAC

CONTROL MODE
Latching with Manual Reset or Automatic Reset with customer installed shorting jumper.

SENSOR TYPE
Type “J” Thermocouple
Type “K” Thermcouple
PRTD, 100ohm@0°C (.00385 alpha)

SET POINT RANGE
0 to 300°F/-20 to 150°C
0 to 600°F/-20 to 315°C
0 to 1400°F/-20 to 760°C
0 to 2300°F/-20 to 1260°C

TRIP INDICATOR
On board LED

RESET FUNCTION
Integral manual reset push button switch; terminals provided for remote reset using customer supplied N.O. momentary switch or for automatic reset (2°F typical hysteresis) using customer installed shorting jumper.

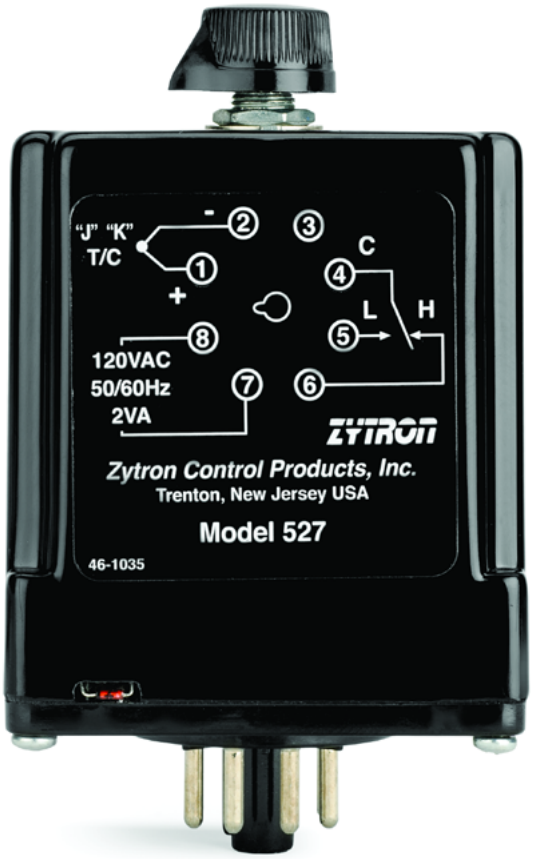
SENSOR BREAK PROTECTION:
Relay de-energizes (N.O. contacts open) with Thermo-couple/RTD break (open circuit).

ENVIRONMENTAL
Operating Temperature: 0°C to 55°C (32°F to 131°F)
Humidity: 5 to 95%, non-condensing

APPROVALS
UL 873 & CUL per CSA C22.2 No. 24 File #E105669
FM 3545 (selected models)
RoHS compliant

ENCLOSED - OCTAL SOCKET

Series 527 Plug-In Temperature Control



PRODUCT HIGHLIGHTS

DESCRIPTION
Low cost, compact plug-in temperature controller with integral set point pot. plugs into standard octal relay socket.

SENSOR OPTIONS
Type J, K, T or E Thermocouple

CONTROL MODES
On-off

OUTPUT OPTIONS
SPDT relay (standard); 24VDC SSR driver output (optional)

FEATURES
Output ON indicator lamp; plugs into industry standard octal relay socket (not supplied).

APPLICATIONS
Commercial Appliances
Pollution Control Equipment
Furnaces
Bonding Presses
Packaging Machines
Hot Stamping Machines
Waste Management Equipment

PACKAGING
Enclosed

MOUNTINGS
Octal socket

SIZE
2.375" x 1.750" x 3.500"H

DETAILED SPECIFICATIONS

POWER INPUT
120VAC ±10%, 50/60Hz
240VAC ±10%, 50/60Hz
24VAC ±15%, 50/60Hz

OUTPUT
SPDT relay rated 3.8 (1.9) Amps Resistive & 1.5 (0.8) Amps Pilot Duty @ 120/240VAC
24VDC SSR driver

CONTROL MODE/ACTION
ON/OFF Heating ON/OFF Cooling

SET POINT ADJ
Integral potentiometer

THERMOCOUPLE TYPE
Type “J” Thermocouple
Type “K” Thermocouple
Type “T” Thermocouple
Type “E” Thermocouple

SET POINT RANGES
Contact factory

COMPENSATION
Automatic cold junction compensation

ENVIRONMENTAL
Operating Temperature: O°C to 50°C
Relative Humidity: 5 to 90%, non-condensing

ENCLOSED - PANEL MTG

Series 1003 Digital Indicating Temperature Controller

PRODUCT HIGHLIGHTS

DESCRIPTION
Digital Indicating Controller with remote set point potentiometer.

SENSOR OPTIONS
Type J, K, T or E Thermocouple
100 or 1,000 ohm PRTD

CONTROL MODES
On-Off with 2°F (1°C) Hysteresis

OUTPUT OPTIONS
SPST N.O. Relay rated 1.5/.8A pilot duty at 120/240VAC
12VDC to drive remote SSR

FEATURES
Miniature size snaps into panel cutout without additional hardware; large highly visible LED display; low voltage power input; RoHS compliant

APPLICATIONS
Holding Cabinets
Environmental Chambers
Packaging Equipment
Laboratory Baths
Refrigerators & Freezers
Warming Bins

CONTROL TYPE
Temperature

PACKAGING
Enclosed

MOUNTINGS
Panel Mtg

SIZE
1.125”H x 2.810”W x 2.70”D

DETAILED SPECIFICATIONS

INPUT VOLTAGE
12VAC C.T. +10%, -15%, 50/60Hz, 3VA Max.

OUTPUT TYPE
SPST N.O. Relay rated 1.5/.8A pilot duty at 120/240VAC
12VDC to drive remote SSR

CONTROL MODE
On-Off with 2°F hysteresis typical
(Other hysteresis values available upon request)

SENSOR TYPE
Type "J" Thermocouple
Type "K" Thermocouple
Type "T" Thermocouple
Type "E" Thermocouple
PRTD, 100ohm@0°C (.00385 alpha)

COMPENSATION
Automatic ambient compensation (Thermocouple sensor only)

SETPOINT RANGE
Several standard ranges between 0 to 999F or C are available (check with factory when ordering)

SETPOINT ADJ
Panel mounting potentiometer with graduated dial
Rear mounted multi-turn trim pot

SENSOR BREAK PROTECTION
Output de-energizes upon sensor break

ENVIRONMENTAL
Operating Temperature: 0 to 50°C (32°F to 125°F)
Relative Humidity: 5 to 90%, non-condensing

APPROVALS
UL/CUL Recognized File E105669
RoHS compliant

ENCLOSED - PANEL MTG WITH INTEGRAL SETPOINT POT

120 Low Cost Enclosed Temperature Controller

PRODUCT HIGHLIGHTS

DESCRIPTION
The Series 120 is a low cost completely enclosed Solid State temperature control with UL Class 2 low voltage sensor circuit, a variety of mounting options, the CE mark on selected models and a full two-year parts & labor warranty.

SENSOR OPTIONS
J, K, T, E TC, RTD or NTC Thermistor

CONTROL MODES
On-Off or Time Proportioning

OUTPUT OPTIONS
3, 10 or 20A SPST Relay, 5A Triac or DC

FEATURES
Fixed, local or SP adj.; Hi Limit with manual reset; surface or snap track mounting; UL & CUL approvals (CE on TC version)Detailed Specifications

APPLICATIONS
Dryers
Holding Cabinets
Environmental Chambers
Packaging Equipment
Fryers, Griddles & Ovens
Steam Kettles
Laboratory Baths
Steam Cleaning Equipment
Incubators
Hot Melt Dispensers

CONTROL TYPE
Temperature

PACKAGING
Enclosed

MOUNTINGS
Snap Track
Sub-Panel
Panel Mtg with Integral Setpoint Pot

SIZE
Custom

DETAILED SPECIFICATIONS

POWER INPUT
115/230VAC (field selectable)
115VAC
230VAC
24VAC

CONTROL OUTPUT
24VDC .03A SSR Driver, SPST N.O. 3A Relay, SPST N.O. 20A Relay

CONTROL MODE
On/Off Heating
On/Off Cooling

OUTPUT TYPE
SPST 3Amp relay
SPST 10Amp relay
SPST 20Amp relay
1Amp Triac
5Amp Triac
24VDC (remote SSR driver)

SENSOR TYPE
Thermistor, PRTD, “J” T/C, “K” T/C, “T” T/C, “E” T/C

STANDARD RANGES
NTC Thermistor - 60F to 250F
NTC Thermistor - 200F to 400F
NTC Thermistor - 200F to 550F
NTC Thermistor - 150F to 450F
NTC Thermistor - 150F to 350F
NTC Thermistor - 50F to 160F
NTC Thermistor - 0F to 100F
NTC Thermistor - 70F to 140F
Thermocouple - 0F to 250F
Thermocouple - 0F to 500F
Thermocouple - 0F to 1000F
Thermocouple - 0F to 2000F
PRTD - 0F to 500F
PRTD - 0F to 1000F
PRTD - 32F to 212F
PRTD - 0F to 250F
PRTD - 70F to 140F

SETPOINT ACCURACY
Typically better than 1% of span

STABILITY
Typically better than +/- 1F over allowable ambient operating temperature or with +/-10% line voltage variation
AMBIENT OPERATING TEMPERATURE
0C to 70C (32F to 158F)

OPERATING RELATIVE HUMIDITY
5 to 90%, non-condensing

Series 120R Panel Mtg Analog Temperature Controller

PRODUCT HIGHLIGHTS

DESCRIPTION
The Series 120R is a low cost, panel mounting electronic temperature controller with integral set point potentiometer.

SENSOR OPTIONS
Thermocouple, RTD or NTC Thermistor

CONTROL MODES
On-Off Heating or Cooling

OUTPUT OPTIONS
SPST Relay or DC SSR driver

FEATURES
A variety of factory configured input voltage and set point range/sensor options; screw or bushing mounting; UL/CUL Recognized; RoHS compliant (CE available on selected models).

APPLICATIONS
Dryers
Holding Cabinets
Environmental Chambers
Packaging Equipment
Fryers, Griddles & Ovens
Steam Kettles
Laboratory Baths
Steam Cleaning Equipment

CONTROL TYPE
Temperature

PACKAGING
Enclosed

MOUNTINGS
Panel Mtg with Integral Setpoint Pot

SIZE
3.30”W x 2.50”H x 1.65”D

DETAILED SPECIFICATIONS

POWER INPUT
120/240VAC (field selectable)
120VAC
240VAC
24VAC

CONTROL MODE
On/Off Heating
On/Off Cooling

OUTPUT TYPE
SPST 3Amp relay
24VDC (remote SSR driver)

SENSOR TYPE
"J" T/C, "K" T/C, "T" T/C, "E" T/C
PRTD, 100ohm@0°C (.00385 alpha)
PRTD, 1Kohm@0°C (.00385 alpha)
PRTD, 1Kohm@0°C (.00375 alpha)
NTC Thermistor

SETPOINT ACCURACY
Typically better than 1% of span

STABILITY
Typically better than +/- 1F over allowable ambient operating temperature or with +/-10% line voltage variation

MOUNTING
.375"D bushing mount (std)
Screw mtg on 1.312" centers

ENVIROMENTAL
Operating Temperature: 0°C to 70°C (32°F to 158°F)
Relative Humidity: 5 to 90%, non-condensing

APPROVALS
UL/CUL Recognized File E105669
RoHS compliant

KEYWORDS
analog, csa, heat cool, heat-cool, incubator, on off, on-off, proportional, rtd, single loop, single-loop, solid state, ssr, thermocouple

ENCLOSED - SNAP TRACK

120 Low Cost Enclosed Temperature Controller

PRODUCT HIGHLIGHTS

DESCRIPTION
The Series 120 is a low cost completely enclosed Solid State temperature control with UL Class 2 low voltage sensor circuit, a variety of mounting options, the CE mark on selected models and a full two-year parts & labor warranty.

SENSOR OPTIONS
J, K, T, E TC, RTD or NTC Thermistor

CONTROL MODES
On-Off or Time Proportioning

OUTPUT OPTIONS
3, 10 or 20A SPST Relay, 5A Triac or DC

FEATURES
Fixed, local or SP adj.; Hi Limit with manual reset; surface or snap track mounting; UL & CUL approvals (CE on TC version)Detailed Specifications

APPLICATIONS
Dryers
Holding Cabinets
Environmental Chambers
Packaging Equipment
Fryers, Griddles & Ovens
Steam Kettles
Laboratory Baths
Steam Cleaning Equipment
Incubators
Hot Melt Dispensers

CONTROL TYPE
Temperature

PACKAGING
Enclosed

MOUNTINGS
Snap Track
Sub-Panel
Panel Mtg with Integral Setpoint Pot

SIZE
Custom

DETAILED SPECIFICATIONS

POWER INPUT
115/230VAC (field selectable)
115VAC
230VAC
24VAC

CONTROL OUTPUT
24VDC .03A SSR Driver, SPST N.O. 3A Relay, SPST N.O. 20A Relay

CONTROL MODE
On/Off Heating
On/Off Cooling

OUTPUT TYPE
SPST 3Amp relay
SPST 10Amp relay
SPST 20Amp relay
1Amp Triac
5Amp Triac
24VDC (remote SSR driver)

SENSOR TYPE
Thermistor, PRTD, “J” T/C, “K” T/C, “T” T/C, “E” T/C

STANDARD RANGES
NTC Thermistor - 60F to 250F
NTC Thermistor - 200F to 400F
NTC Thermistor - 200F to 550F
NTC Thermistor - 150F to 450F
NTC Thermistor - 150F to 350F
NTC Thermistor - 50F to 160F
NTC Thermistor - 0F to 100F
NTC Thermistor - 70F to 140F
Thermocouple - 0F to 250F
Thermocouple - 0F to 500F
Thermocouple - 0F to 1000F
Thermocouple - 0F to 2000F
PRTD - 0F to 500F
PRTD - 0F to 1000F
PRTD - 32F to 212F
PRTD - 0F to 250F
PRTD - 70F to 140F

SETPOINT ACCURACY
Typically better than 1% of span

STABILITY
Typically better than +/- 1F over allowable ambient operating temperature or with +/-10% line voltage variation
AMBIENT OPERATING TEMPERATURE
0C to 70C (32F to 158F)

OPERATING RELATIVE HUMIDITY
5 to 90%, non-condensing

ENCLOSED - SUB-PANEL

120 Low Cost Enclosed Temperature Controller

PRODUCT HIGHLIGHTS

DESCRIPTION
The Series 120 is a low cost completely enclosed Solid State temperature control with UL Class 2 low voltage sensor circuit, a variety of mounting options, the CE mark on selected models and a full two-year parts & labor warranty.

SENSOR OPTIONS
J, K, T, E TC, RTD or NTC Thermistor

CONTROL MODES
On-Off or Time Proportioning

OUTPUT OPTIONS
3, 10 or 20A SPST Relay, 5A Triac or DC

FEATURES
Fixed, local or SP adj.; Hi Limit with manual reset; surface or snap track mounting; UL & CUL approvals (CE on TC version)Detailed Specifications

APPLICATIONS
Dryers
Holding Cabinets
Environmental Chambers
Packaging Equipment
Fryers, Griddles & Ovens
Steam Kettles
Laboratory Baths
Steam Cleaning Equipment
Incubators
Hot Melt Dispensers

CONTROL TYPE
Temperature

PACKAGING
Enclosed

MOUNTINGS
Snap Track
Sub-Panel
Panel Mtg with Integral Setpoint Pot

SIZE
Custom

DETAILED SPECIFICATIONS

POWER INPUT
115/230VAC (field selectable)
115VAC
230VAC
24VAC

CONTROL OUTPUT
24VDC .03A SSR Driver, SPST N.O. 3A Relay, SPST N.O. 20A Relay

CONTROL MODE
On/Off Heating
On/Off Cooling

OUTPUT TYPE
SPST 3Amp relay
SPST 10Amp relay
SPST 20Amp relay
1Amp Triac
5Amp Triac
24VDC (remote SSR driver)

SENSOR TYPE
Thermistor, PRTD, “J” T/C, “K” T/C, “T” T/C, “E” T/C

STANDARD RANGES
NTC Thermistor - 60F to 250F
NTC Thermistor - 200F to 400F
NTC Thermistor - 200F to 550F
NTC Thermistor - 150F to 450F
NTC Thermistor - 150F to 350F
NTC Thermistor - 50F to 160F
NTC Thermistor - 0F to 100F
NTC Thermistor - 70F to 140F
Thermocouple - 0F to 250F
Thermocouple - 0F to 500F
Thermocouple - 0F to 1000F
Thermocouple - 0F to 2000F
PRTD - 0F to 500F
PRTD - 0F to 1000F
PRTD - 32F to 212F
PRTD - 0F to 250F
PRTD - 70F to 140F

SETPOINT ACCURACY
Typically better than 1% of span

STABILITY
Typically better than +/- 1F over allowable ambient operating temperature or with +/-10% line voltage variation
AMBIENT OPERATING TEMPERATURE
0C to 70C (32F to 158F)

OPERATING RELATIVE HUMIDITY
5 to 90%, non-condensing

PRODUCT HIGHLIGHTS

DESCRIPTION
Low cost, enclosed analog temperature controller with a variety of factory configured input voltage, output and sensor options.

SENSOR OPTIONS
Thermocouple or RTD

CONTROL MODES
On-Off, Time proportioning or Latching Hi Limit with manual reset.

OUTPUT OPTIONS
Single 20 Amp relay, dual 10 Amp relays, 5 or 10 Amp optically coupled Triac or 24VDC to drive external Solid State Relay.

FEATURES
Power and load-on indicator LEDs, screw terminal field wiring connections, local or remote set point adjustment options. UL/CUL Recognized, RoHS compliant. Three year parts & labor warranty.

APPLICATIONS
Environmental Chambers
Packaging Machines
Solvent Reclamation Sys
Commercial Dryers
Refrigeration Equipment
Incubators
Laboratory Baths & Ovens
Parts Washers & Degreasers
Film Processors
Plastic Molding Equipment
Chillers

PACKAGING
Enclosed

MOUNTINGS
Sub-Panel

SIZE
5.585” x 2.600”

DETAILED SPECIFICATIONS

INPUT VOLTAGE
115/230VAC±15%, 50/60Hz
24VAC±15%, 50/60Hz

OUTPUT TYPE
SPDT 20A Relay
Single 10A Triac
24VDC SSR driver
(2) SPST 10A relays
(2) 1A Pilot Duty Triacs

CONTROL TYPE
Heating , Cooling, Heating/Cooling, Limit Control

CONTROL MODE
Proportioning (Adj. BW)
ON-OFF (Adj. Hysteresis)
Proportioning Heat/Cool

ON-OFF HEAT/COOL
Proportioning Heat; ON-OFF Cool
ON-OFF Heat: Proportioning Cool
Hi Limit w/ Manual Reset

SENSOR TYPE
Type J Thermocouple
Type K Thermocouple
PRTD, 100ohm@0°C (.00385 alpha)
PRTD, 1000ohm@0°C (.00385 alpha)

STANDARD SET POINT RANGES
Contact the factory for available range/sensor combinations.

SETPOINT ADJUSTMENT
Local Potentiometer
Remote Potentiometer
Fixed Setpoint

ACCURACY
Typically better than 0.5% of set point span.

CONTROL STABILITY
Typically better than ±1°C with ±10°C change in ambient temperature or ±10% change in line voltage.

SENSOR FAULT PROTECTION
Open or shorted RTD or open thermocouple causes upscale output condition.

ENVIRONMENTAL
Operating Temperature: 0°C to 55°C (32 F to 130 F) Relative Humidity: 5 to 90%, non-condensing
* Contact factory for special requirements

APPROVALS
UL/CUL Recognized E105669, RoHS compliant

EPOXY ENCAPSULATED - SURFACE MTG

Series 122P Epoxy Encapsulated Temperature Controller

PRODUCT HIGHLIGHTS

DESCRIPTION
Rugged epoxy encapsulated electronic temperature controller with heavy duty 30 AMP relay output.

SENSOR OPTIONS
"J", "K", "T" or "E" Thermocouple

CONTROL MODES
On-Off heating or cooling

OUTPUT OPTIONS
SPST 30Amp relay std; SPDT relay or 24VDC SSR driver optional.

FEATURES
Shock and vibration proof epoxy encapsulated packaging; heavy duty 30 AMP relay output; available with fixed or remote set point options; UL/CUL Recognized; RoHS compliant.

APPLICATIONS
Water Heaters
Packaging Machines
Laboratory Baths
Refrigerators & Freezers
Environmental Chambers
Dryers
Commercial Cooking Equipment

CONTROL TYPE
Temperature

PACKAGING
Epoxy encapsulated

MOUNTINGS
Surface Mtg
SIZE
4.08"L x 3.06"W x 1.45"H

DETAILED SPECIFICATIONS

INPUT VOLTAGE
115/230 VAC (field selectable)
115 VAC
230 VAC
24 VAC

CONTROL MODE
On-Off with 3-4°F hyst (Std)
Time Proportioning w/BW of 3% of span & 20sec cycle rate (Std)

CONTROL ACTION
Heating
Cooling

SETPOINT ADJ
Remote SP
Fixed SP with blind trim pot adj.

SENSOR
Type J Thermocouple
Type K Thermocouple
Type T Thermocouple
Type E Thermocouple
Pt RTD, 100ohm@0°C
Pt RTD, 1,000ohm@0°C

STANDARD RANGES
Contact factory for available set point range/sensor combinations.

COMPENSATION
Automatic cold conjunction compensation (thermocouple sensor only)

SENSOR FAULT PROTECTION
Output de-energizes with open sensor

ENVIRONMENTAL
Operating Temperature: 0°C to 70°C (32°F to 158°F)
Relative Humidity: 5 to 90%, non-condensing

KEYWORDS
analog, csa, heat cool, heat-cool, incubator, on off, on-off, rtd, single loop, single-loop, solid state, ssr, thermo-couple

NEMA 4X - SURFACE MTG

Series 565 NEMA 4X (IP65) Dual Stage Temperature Controller

PRODUCT HIGHLIGHTS

DESCRIPTION
The 565 is a highly reliable, microprocessor based Dual Stage Digital Indicating On-Off Temperature Controller housed in a robust, corrosion resistant, plastic IP65 enclosure.

SENSOR OPTIONS
Solid State Transducer probe assembly

CONTROL MODES
Each stage set independently for Heating or Cooling mode; factory default is Heating for Stage 1 and Cooling for Stage 2

OUTPUT OPTIONS
SPDT relays rated for 120(208/240)VAC

FEATURES
Compact IP65 watertight enclosure; LED display; simple 4-button operation; selectable heat or cool mode for stage 1 and 2; SPDT relay outputs; visual high and low alarms with flashing display; moisture resistant sensor included

APPLICATIONS
Fermenation Tanks
Barrel Room Temperature Control
Automatic Cycling of Ventilation Fans
Storage Bin Temperature Alarm
Space Heating
Refrigerated storage tanks
Plating Bath Temperature Control
Heat tracing
Freeze control
Cooling Towers

CONTROL TYPE
Temperature

PACKAGING
NEMA 4X

MOUNTINGS
Surface Mtg

SIZE
3.95” x 3.95” x 2.50” Depth

DETAILED SPECIFICATIONS

INPUT VOLTAGE
120/240VAC ±15%, 50/60Hz
24VAC ±10%, 50/60HZ

OUTPUTS
SPDT Relays rated 10(5)A N.O. & 6(3)A N.C., 120(240)VAC Resistive

CONTROL ACTION
On-Off with user selectable differential of 1 to 30°F (factory default 5°F)

CONTROL MODE
Each stage can be user set for Heating or Cooling

SET POINT RANGE
-30°F to +220°F or -34°C to +105°C (user selectable display units)

DISPLAY
3 digit, .56" high Red 7-segment LED

DISPLAY RANGE
-67°F to 257°F (-55°C to 125°C)

ACCURACY
±1°F (0.5°C) from 14°F to 185°F (-10°C to 85°C)

SENSOR
Solid State Transducer in moisture resistant .250"D x 4.0"L stainless steel probe with 6ft cable (standard)

VISUAL ALARM
Display flashes when temperature exceeds alarm set point

ALARM SET POINT RANGE
-30°F to +220°F or -34°C to +105°C & OFF (user selectable)

ENVIRONMENTAL
Operating Temperature: -25°F to 140°F
Storage Temperature: -40°F to 185°F
Environmental Protection: IP65

OPEN FRAME - NYLON STANDOFFS

Series 121 Open Board Temperature Controller

PRODUCT HIGHLIGHTS

DESCRIPTION
Low cost, compact open board Thermistor sensing temperature controller with heavy duty 30 AMP relay output.

SENSOR OPTIONS
NTC Thermistor

CONTROL MODES
On-Off heating; On-Off cooling; Time Proportioning optional.

OUTPUT OPTIONS
SPST 30Amp relay (std); SPDT 30A relay or 24VDC SSR driver optional

FEATURES
120/240VAC field selectable input voltage; SPST 30 AMP relay output; fixed, local or remote SP options; UL/CUL Recognized; RoHS compliant.

APPLICATIONS
Gas Analyzers
Water Heaters
Packaging Machines
Laboratory Baths
Refrigerators & Freezers
Environmental Chambers
Commercial Cooling
Appliances

CONTROL TYPE
Temperature

PACKAGING
Open Frame

MOUNTINGS
Nylon standoffs

SIZE
3.4” x 2.5”

DETAILED SPECIFICATIONS

INPUT VOLTAGE
120/240 VAC (field selectable)
120 VAC
240 VAC
24 VAC

CONTROL MODE
On-Off with 3-4°F Hysteresis
Time Proportioning, BW 3% of SP span, 20sec Cycle

SETPOINT ADJ
Remote SP
Local trim pot
Fixed Set Point

SENSOR
NTC Thermistor (value dependent on set point range)

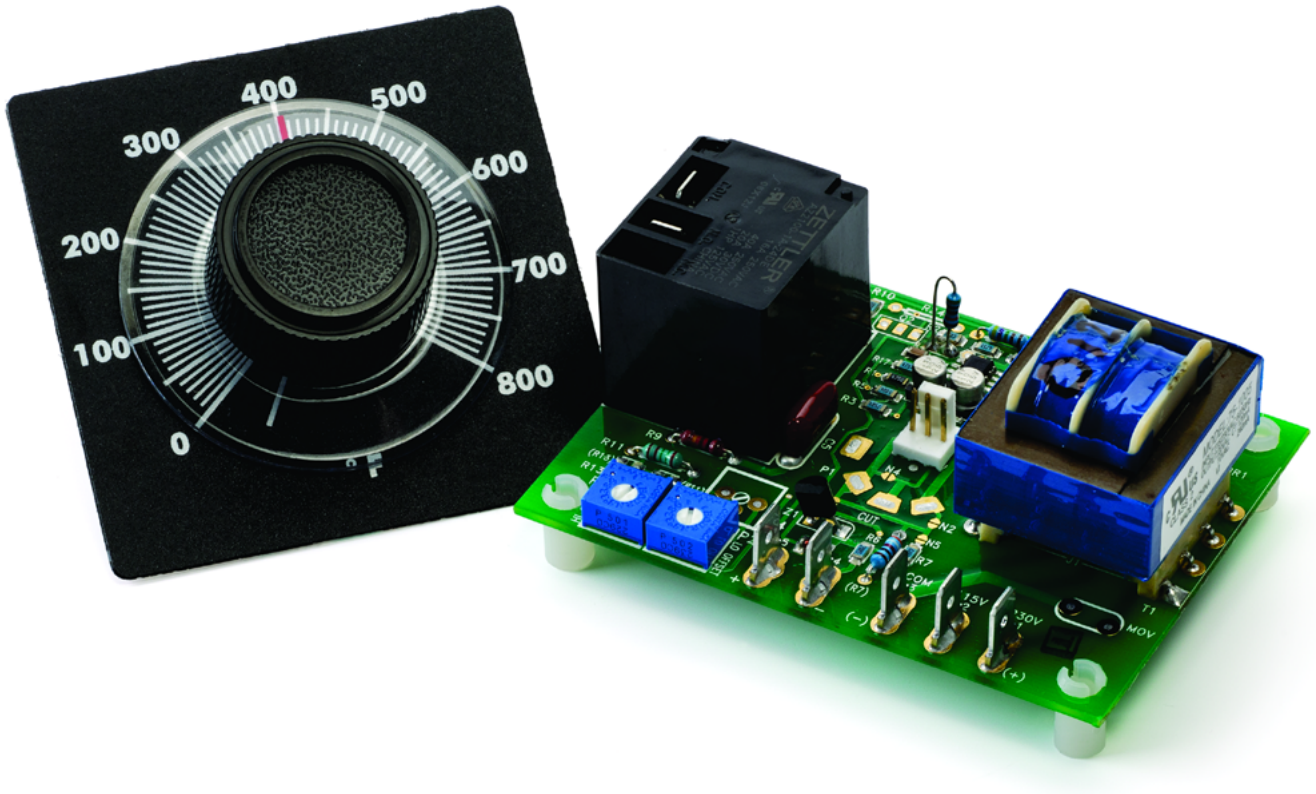
SENSOR FAULT PROTECTION
Output de-energizes with open or shorted sensor

ENVIRONMENTAL
Operating Temperature: 0 C to 70 C
Humidity: 5 to 90%, non-condensing

APPROVALS
UL/CUL Recognized E105669
RoHS compliant

KEYWORDS
analog, csa, heat cool, heat-cool, on off, on-off, proportional, single loop, single-loop, solid state

OPEN FRAME -
NYLON STANDOFFS, STD



PRODUCT HIGHLIGHTS

DESCRIPTION
Low cost, small footprint open board temperature controller with heavy duty 30 AMP relay output

SENSOR OPTIONS
"J", "K", "T" or "E" Thermocouple; 100ohm or 1K ohm PRTD

CONTROL MODES
On-Off or Time Proportioning

OUTPUT OPTIONS
SPST 30Amp relay std; SPDT relay or 24VDC SSR driver optional.

FEATURES
120/240VAC field selectable input voltage; SPST 30 AMP relay output; fixed, local or remote SP options; available with standoff or snap-track mtg; Potted version available (see 122P). UL/CUL Recognized; RoHS compliant. terminations

APPLICATIONS
Gas Analyzers
Water Heaters
Packaging Machines
Laboratory Baths
Refrigerators & Freezers
Environmental Chambers
Commercial Cooling
Appliances

CONTROL TYPE
Temperature

PACKAGING
Open Frame

MOUNTINGS
Snap Track
Nylon standoffs, Std

SIZE
3.625" x 2.625"

DETAILED SPECIFICATIONS

INPUT VOLTAGE
115/230 VAC (field selectable)
115 VAC
230 VAC
24 VAC

CONTROL MODE
On-Off
Time Proportioning

CONTROL ACTION
Heating
Cooling

SETPOINT ADJ
Remote SP
Local SP with graduated dial
Fixed SP

SENSOR
Type J Thermocouple
Type K Thermocouple
Type T Thermocouple
Type E Thermocouple
Pt RTD, 100ohm@0°C
Pt RTD, 1,000ohm@0°C

STANDARD RANGES
Contact factory for available SP ranges

COMPENSATION
Automatic cold conjunction compensation
(Thermocouple sensor only)

SENSOR FAULT PROTECTION
Output de-energizes with open sensor

ENVIRONMENTAL
Operating Temperature: 0°C to 70°C (32°F to 158°F)
Relative Humidity: 5 to 90%, non-condensing

APPROVALS
UL/CUL Recognized File E105669
RoHS compliant

KEYWORDS
analog, csa, heat cool, heat-cool, incubator, on off, on-off, proportional, rtd, single loop, single-loop, solid state, ssr, thermocouple

OPEN FRAME - PANEL MTG

Series 1900 Programmable Digital Indicating Time/Temperature Controller

PRODUCT HIGHLIGHTS

DESCRIPTION
The Series 1900 programmable controller is an advanced, highly reliable microprocessor based control providing unparalleled versatility featuring three field selectable operating modes.

SENSOR OPTIONS
Thermocouple or RTD

CONTROL MODES
On/Off Temperature Controller with adjustable differential

OUTPUT OPTIONS
Form A 30A Relay
Form C 30A Relay
12VDC SSR driver

FEATURES
Panel mounting or skeleton construction, field programmable,compact size, bright 4 digit LED display, choice of rotary or push button operator interface, 30A relay or 12VDC output. UL/CUL Recognized, RoHS compliant.

APPLICATIONS
Holding Cabinets
Laboratory Equipment
Environmental Chambers
Packaging Machines
Dryers
Hot Stamping Machines
Commercial Cooking Equipment

CONTROL TYPE
Time
Temperature
Time/Temperature

PACKAGING
Open Frame

MOUNTINGS
Panel Mtg

SIZE
2.75” x 2.75” (cutout); 2.25”D

DETAILED SPECIFICATIONS

INPUT VOLTAGE
120/240VAC ±15%, 50/60Hz, 2.5VA
24VAC ±15%, 50/60Hz, 2.5VA

OUTPUT
SPST (Form A) 30A Relay
SPDT (Form C) 30A Relay
12VDC SSR driver

USER SELECTABLE OPERATING MODES
Mode 1 - Time/Temperature mode - Ramp to SP1 & soak for preset time then hold at SP2 or turn off.
Mode 2 - Temperature control only mode with adjustable differential
Mode 3 - Timer only

SP RANGES
Temperature: 50° F to +999°F (10°C to +537°C)
Timer: 0 to 99 mins 59 Secs or 0 to 99Hrs 59 Mins, user selectable

DISPLAY RANGE
50° F to +999°F (10°C to +537°C) and 0 to 99 hrs/mins 59 mins/secs, user selectable

SENSOR TYPE (TEMP MODES ONLY)
Type “J” Thermocouple
Type “K” Thermocouple
Pt RTD, 100ohm@0°C
Pt RTD, 1,000ohm@0°C

DISPLAY
4 Digit, 7 segment LED display and LED output ON indicator lamp

ANNUNCIATOR
End of cycle audible annunciator (beeper)

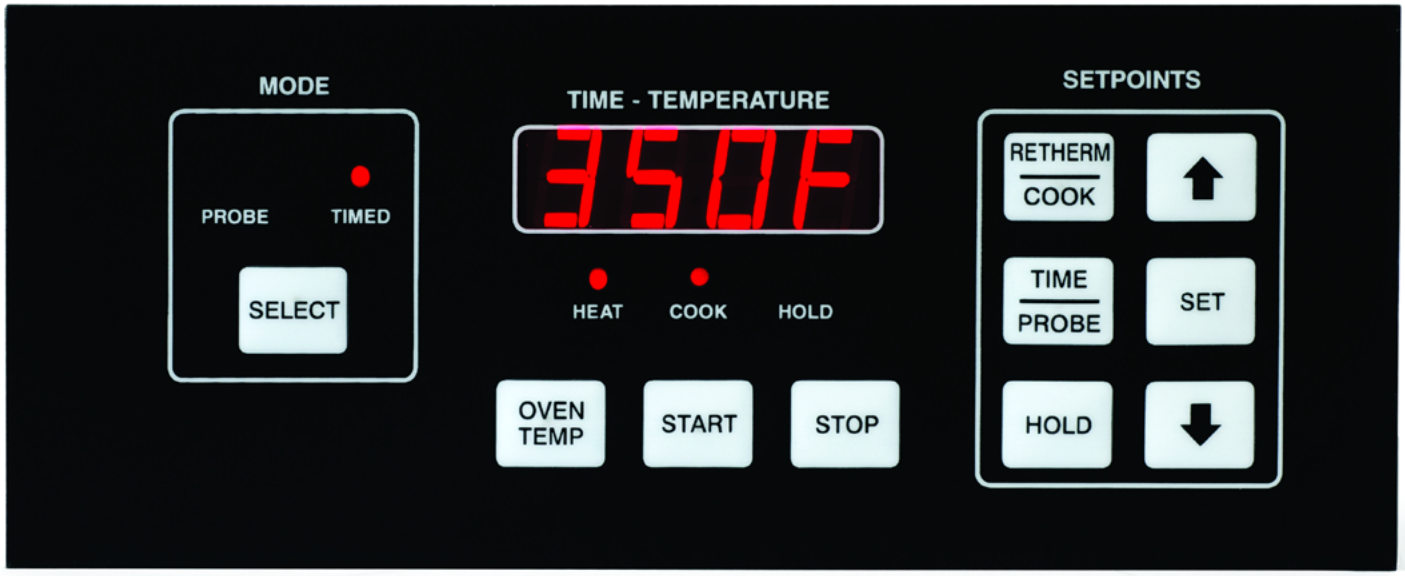
USER INTERFACE
Rotary Encoder w/Push Buttons
Push Button Only

ENVIRONMENTAL
Operating Temperature: -25°F to 158°F (-32°C to +70°C); optional 185° F (85°C) Max
Storage Temperature: -40°F to 185°F (-40°C to +85°C)
Humidity: 0 to 90% Relative Humidity, non-condensing (operating and storage)

APPROVALS
UL/CUL Recognized E105669
RoHS compliant

KEYWORDS
digital, csa, heat-cool, heat cool, incubator, on-off, on off, proportional, rtd, single loop, single-loop, solid state, ssr, thermocouple

Series 555 Digital Time/Temperature Cooking Controller



PRODUCT HIGHLIGHTS

DESCRIPTION
The Series 555 is a microprocessor cooking controller featuring exceedingly intuitive operation, a bright easy to read LED display and single button access to up to 10 user programmed menus.

SENSOR OPTIONS
100 ohm PRTD Std; 1K ohm PRTD optional

CONTROL MODES
Timed Cook mode and Meat Probe Cook mode

OUTPUT OPTIONS
5Amp SPST N.O. Relay (optional 1Amp Opto Cpld SSR or DC SSR driver available)

FEATURES
User setup parameters are saved in non-volatile memory and a setup lockout feature prevents unauthorized access; up to 10 menu programs can be saved using two optional 536-1 Product Key modules. UL/CUL Recognized & RoHS compliant.

APPLICATIONS
Roast & Hold Ovens
Re-Thermalization Cabinets
Combi Ovens

CONTROL TYPE
Time/Temperature

PACKAGING
Open Frame

MOUNTINGS
Panel Mtg

SIZE
7.250” x 2.562” Cutout

DETAILED SPECIFICATIONS

POWER INPUT
150/230VAC +/-15% (field selectable), 50/60 HZ

MAIN HEATING OUTPUT
5Amp SPST N.O. Relay, 12VDC SSR driver

AUX HEATING OUTPUT
12VDC SSR driver

FAN OUTPUT
5Amp SPST N.O. Relay, DC SSR Driver

OPERATING MODES
User selectable
OP1 = Normal Operating mode
OP2 = Classic (legacy) Operating Mode

HEAT CONTROL MODE
ON-OFF with user adjustable differential (1 F to 25 F)

FAN CONTROL MODE
Fan relay energizes continuously during Cook cycle and cycles with heat relay during the Hold cycle.

COOK MODES
User selectable Time Terminated Cook cycle or Meat Probe terminated Cook cycle.

SENSOR INPUTS
Oven Sensor and Meat Probe Sensor inputs

SENSOR TYPE
PRTD, 100ohm @ 0°C, PRTD, 1Kohm @ 0°C

DISPLAY
Single 4 digit, .56”H 7-segment Red LED

ANUNCIATORS
Heat, Cook & Hold LED status indicators;
Probe & Timed Mode LED status indicators;
Audible alarm

SET POINT RANGE
Cook, Hold & Probe Max/Min S.P. limits are settable between 0 F and 999 F (0 C to 537 C)

ALARMS
Power Failure - display flashes
Oven Temp Alarm - display flashes and beeper sounds

TIMING RANGES
High range: 99hrs 59mins
Low range: 99mins 59secs

FRONT PANEL
Control Setup and SP programming buttons: SET, UP, DOWN, COOK, HOLD & PROBE/TIME
Control Operating Buttons: START, STOP, OVEN TEMP & MODE

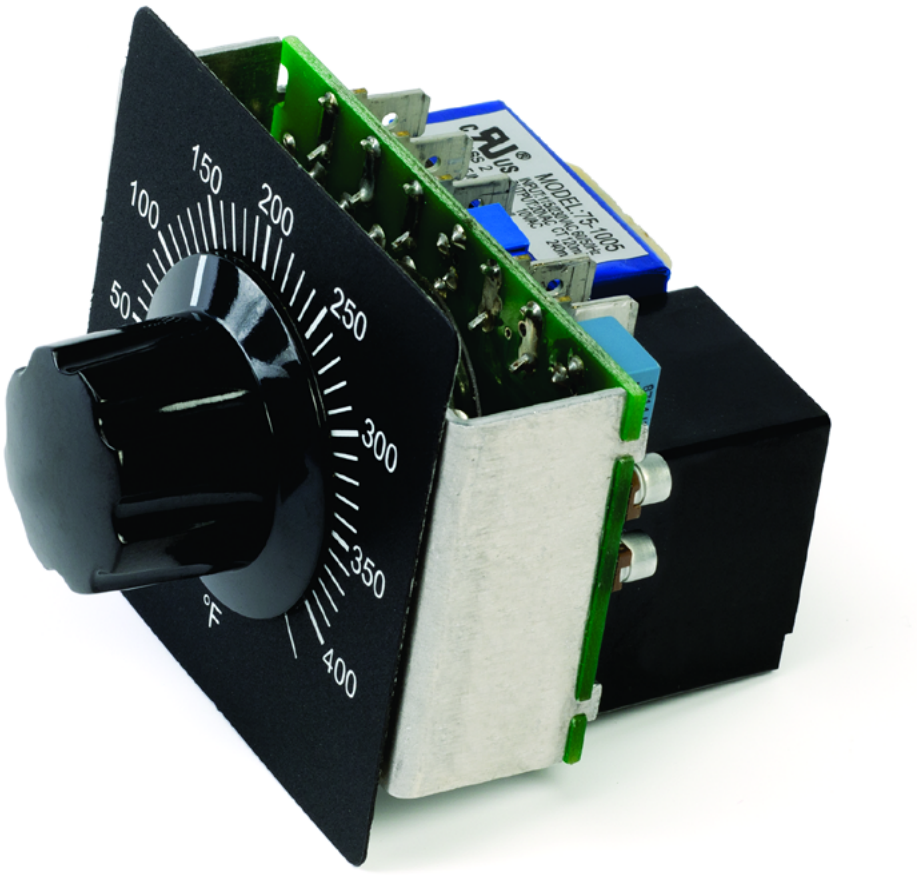
MEMORY
Non-volatile E2PROM retains settings when power is removed

ENVIRONMENTAL
Operating Temperature: 0 to 60°C
Relative Humidity: 10 to 90%, non-condensing

APPROVALS
UL/CUL Recognized File E105669
RoHS compliant

OPEN FRAME - PANEL MTG WITH INTEGRAL SETPOINT POT

Series 126 Solid State Thermostat



PRODUCT HIGHLIGHTS

DESCRIPTION
Low cost, high reliability solid state replacement for a bulb & capillary Thermostat.

SENSOR OPTIONS
Type J, K, T or E Thermocouple or NTC Thermistor

CONTROL MODES
On-Off

OUTPUT OPTIONS
SPST or SPDT 30A relay;
24VDC to drive external SSR

FEATURES
Small size and available mtg options retrofit most industry standard B&C mtg dimensions, UL/CUL Recognized and RoHS compliant.

APPLICATIONS
Refrigerators & Freezers
Water Heaters
Cooking Appliances
Environmental Chambers
Packaging Machines
Laboratory Baths & Ovens
Warming Bins

CONTROL TYPE
Temperature

PACKAGING
Open Frame

MOUNTINGS
Panel Mtg with Integral Setpoint Pot

SIZE
2.625”W x 1.625”H x 1.875”D

DETAILED SPECIFICATIONS

INPUT VOLTAGE
115/230 VAC
115 VAC
230 VAC
24 VAC
24 VDC

OUTPUT OPTIONS
SPST 30A Relay
SPDT 30A Relay
24VDC SSR driver

CONTROL MODE/ACTION
On-Off Heating with 3-4°F hysteresis standard.
(Contact factory for other hysteresis values)

SENSOR TYPE
"J" Thermocouple
"K" Thermocouple
"T" Thermocouple
"E" Thermocouple
NTC Thermistor

STANDARD RANGES/SENSORS
Thermocouple: 0F to 250 F
Thermocouple: 0F to 500 F
Thermocouple: 0F to 1000F
Thermocouple: 0F to 2000F
NTC Thermistor: 60F to 250F
NTC Thermistor: 200F to 400F
NTC Thermistor: 150F to 450F
NTC Thermistor: 150F to 350F
NTC Thermistor: 50F to 160F
NTC Thermistor: 0F to 100F
NTC Thermistor: 70F to 140F

COMPENSATION
Automatic Ambient compensation (Thermocouple only)

SENSOR FAULT PROTECTION
Output de-energizes with sensor fault.

POT SHAFT OPTIONS
.176" "D" shaft
.250"D round shaft

MOUNTING OPTIONS
1.125" & 1.750" Mtg Centers
1.312" x 1.750" Mtg Centers

OPERATING TEMPERATURE
- 40°C to 70°C
- 40°C to 85°C

RELATIVE HUMIDITY
5 to 90% RH, non-condensing

KEYWORDS
analog, csa, heat cool, heat-cool, incubator, on off, on-off, rtd, single loop, single-loop, solid state, ssr, thermo-couple

OPEN FRAME - PANEL MTG WITH REMOTE SETPOINT POT

360 Dual Loop Temperature Controller

PRODUCT HIGHLIGHTS

DESCRIPTION
Low cost; bare board design; extremely compact; heavy duty 30 AMP relay output; UL Class 2 low voltage sensor circuit; full two year parts & labor warranty

SENSOR OPTIONS
NTC Thermistor (value depends on range)

CONTROL MODES
On-Off with 3 degrees F to 4 degrees F hysteresis standard; 1 degree F to 25 degrees F hysteresis optional

OUTPUT OPTIONS
30Amp SPST relays, UL rated 20 Amps resistive and 1Amp pilot duty @ 120/240VAC for 100,000 cycles; SPDT relays or 24VDC to drive external SSRs optional

FEATURES
115/230 VAC field selectable input; Dual SPST 30 AMP relay outputs; ON-OFF control mode; 1/4" QC field terminations

APPLICATIONS
Holding Cabinets
Laboratory Equipment
Incubators
Film Processors
Hot Stamping Machines
Sterilization Proofers
Commercial Ovens

PACKAGING
Open Frame

MOUNTINGS
Panel Mtg with Remote SetPoint Pot

SIZE
4.1" x 3.1" x 1.65 H

DETAILED SPECIFICATIONS

POWER INPUT
115/230VAC +/-10%, 50/60Hz, 3VA max. ; 24VAC +/-10%optional

SET POINT 1 ADJ
Fixed SP
Remote SP
Local SP

SET POINT 2 ADJ
Fixed SP
Remote SP
Local SP

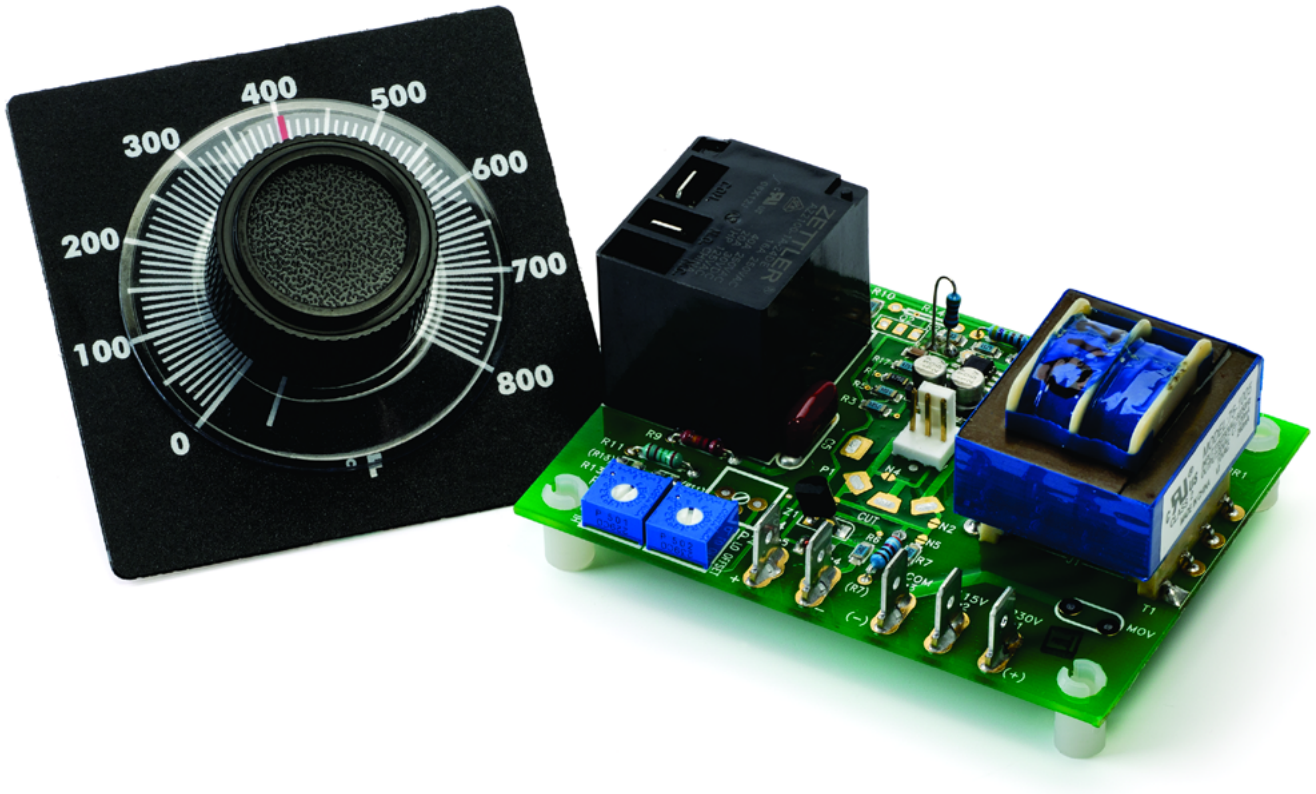
OUTPUT 1
20 Amp Relay
24 VDC to drive external SSR

OUTPUT 2
20 Amp Relay
24 VDC to drive external SSR

SENSOR FAULT PROTECTION
Output de-energizes with open or shorted sensor

AMBIENT OPER. TEMPERATURE
0 C to 70 C ; Relative Humidity 5 to 90% non-condensing

OPEN FRAME - SNAP TRACK



PRODUCT HIGHLIGHTS

DESCRIPTION
Low cost, small footprint open board temperature controller with heavy duty 30 AMP relay output

SENSOR OPTIONS
"J", "K", "T" or "E" Thermocouple; 100ohm or 1K ohm PRTD

CONTROL MODES
On-Off or Time Proportioning

OUTPUT OPTIONS
SPST 30Amp relay std; SPDT relay or 24VDC SSR driver optional.

FEATURES
120/240VAC field selectable input voltage; SPST 30 AMP relay output; fixed, local or remote SP options; available with standoff or snap-track mtg; Potted version available (see 122P). UL/CUL Recognized; RoHS compliant. terminations

APPLICATIONS
Gas Analyzers
Water Heaters
Packaging Machines
Laboratory Baths
Refrigerators & Freezers
Environmental Chambers
Commercial Cooling
Appliances

CONTROL TYPE
Temperature

PACKAGING
Open Frame

MOUNTINGS
Snap Track
Nylon standoffs, Std

SIZE
3.625" x 2.625"

DETAILED SPECIFICATIONS

INPUT VOLTAGE
115/230 VAC (field selectable)
115 VAC
230 VAC
24 VAC

CONTROL MODE
On-Off
Time Proportioning

CONTROL ACTION
Heating
Cooling

SETPOINT ADJ
Remote SP
Local SP with graduated dial
Fixed SP

SENSOR
Type J Thermocouple
Type K Thermocouple
Type T Thermocouple
Type E Thermocouple
Pt RTD, 100ohm@0°C
Pt RTD, 1,000ohm@0°C

STANDARD RANGES
Contact factory for available SP ranges

COMPENSATION
Automatic cold conjunction compensation
(Thermocouple sensor only)

SENSOR FAULT PROTECTION
Output de-energizes with open sensor

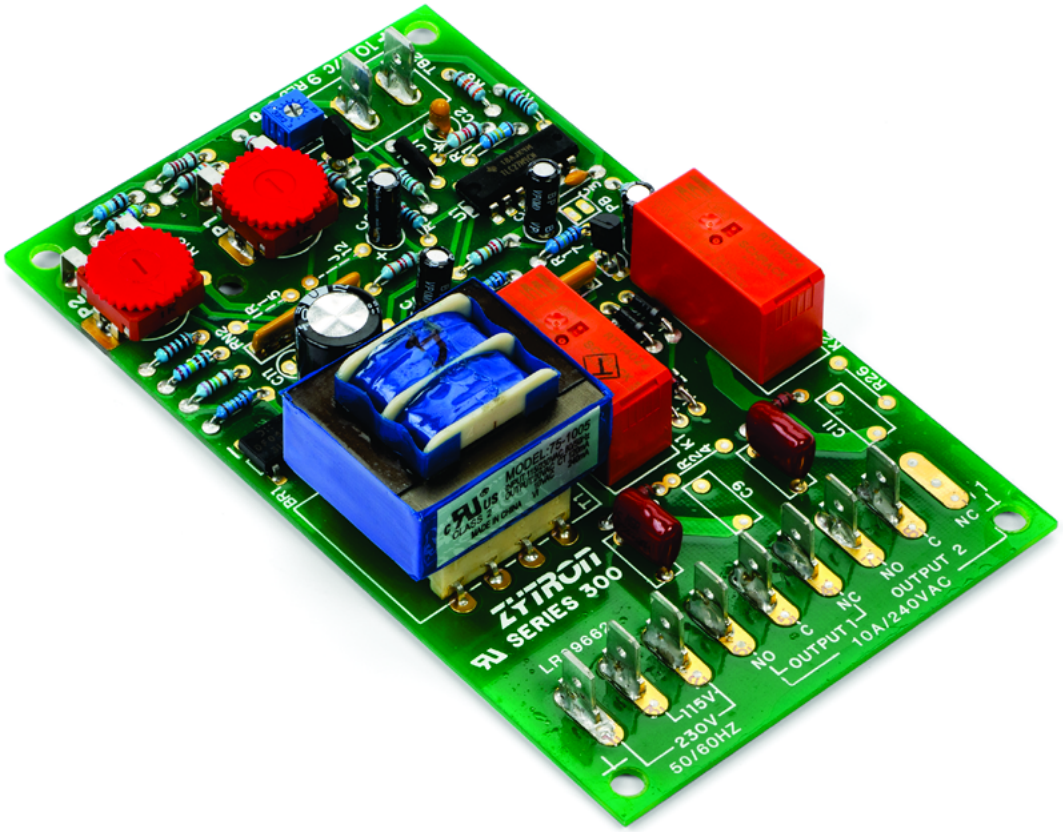
ENVIRONMENTAL
Operating Temperature: 0°C to 70°C (32°F to 158°F)
Relative Humidity: 5 to 90%, non-condensing

APPROVALS
UL/CUL Recognized File E105669
RoHS compliant

KEYWORDS
analog, csa, heat cool, heat-cool, incubator, on off, on-off, proportional, rtd, single loop, single-loop, solid state, ssr, thermocouple

OPEN FRAME -
SURFACE MTG WITH 4 STANDOFFS

Series 300 Dual Setpoint Thermocouple Controller



PRODUCT HIGHLIGHTS

DESCRIPTION
Low cost, dual output board level Thermocouple temperature controller.

SENSOR OPTIONS
J, K, T or E thermocouple

CONTROL MODES
On-Off with 3 to 4°F hysteresis standard;
(special hysteresis values as required)

OUTPUT OPTIONS
Two SPDT relays rated 10Amp resistive & 1 Amp pilot duty @ 120(240)VAC; 24VDC @ 20ma SSR driver optional.

APPLICATIONS
Laboratory Equipment
Gas Analyzers
Environmental Chambers
Commercial Appliances
Furnaces
Ovens
Pizza Ovens
Process Alarms

CONTROL TYPE
Temperature

PACKAGING
Open Frame

MOUNTINGS
Surface Mtg with 4 Standoffs

SIZE
5.5”L x 3.25”W

DETAILED SPECIFICATIONS

INPUT VOLTAGE
115/230VAC ±10%, 50/60Hz, 3VA max.
24VAC ±10%, 50/60Hz

OUTPUT 1
SPDT Relay rated 10 Amps resistive & 1 Amp pilot duty
24VDC, 30ma SSR driver

OUTPUT 2
SPDT Relay rated 10 Amps resistive & 1 Amp pilot duty
24VDC, 30ma SSR driver

CONTROL ACTION
On-Off with 3-4°F hysteresis typical
(Contact factory for special hysteresis values)

SETPOINT RANGE
Overlapping ranges from -100°F to 2500°F
Specify when ordering

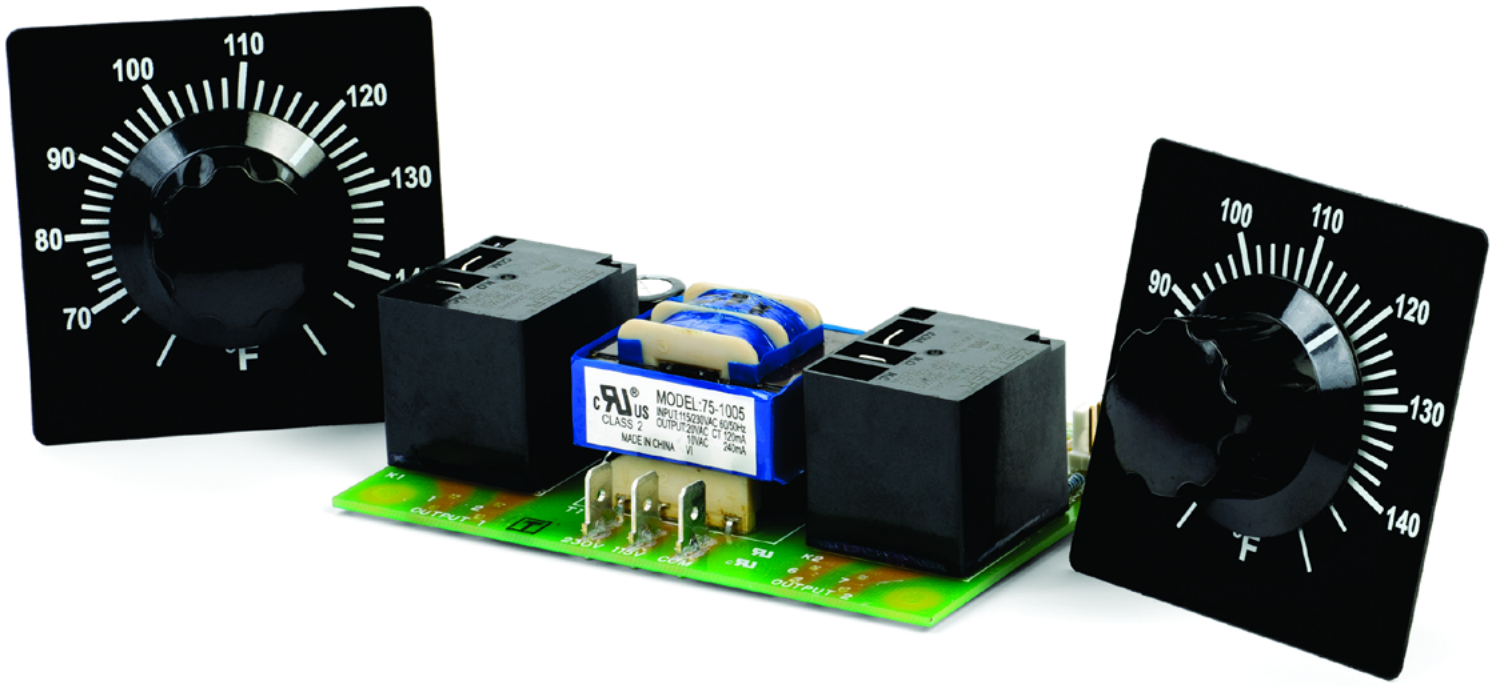
COMPENSATION
Automatic cold junction compensation

SETPOINT ADJ
SP#1 & SP#2 are factory set and field adjustable via separate board mounted trim pots; Remote setpoint pots are optional.

TC BREAK PROTECT
Output de-energizes for open thermocouple

ENVIRONMENTAL
Operating Temperature: 0 C to 70 C
Operating Humidity: 5 to 90%RH, non-condensing

APPROVALS
UL/CUL Recognized File E105669
RoHS compliant



PRODUCT HIGHLIGHTS

DESCRIPTION
Low cost, compact, open frame dual loop temperature controller featuring heavy duty 30 AMP relay outputs with optional active arc suppression circuit for extended relay life.

SENSOR OPTIONS
NTC Thermistor

CONTROL MODES
2 Loop On-Off Heating or Cooling
Single Loop Heating or Cooling w/Alarm

OUTPUT OPTIONS
30Amp SPST Relays standard
SPDT relays or 24VDC outputs optional

FEATURES
RoHS Compliant
UL/CUL Pending

APPLICATIONS
Holding Cabinets
Laboratory Equipment
Incubators
Film Processors
Hot Stamping Machines
Sterilization Proofers
Commercial Ovens

PACKAGING
Open Frame

MOUNTINGS
Surface Mtg with 4 Standoffs

DETAILED SPECIFICATIONS

POWER INPUT OPTIONS
120/240VAC ±10%, 50/60Hz, 3VA max
24VAC ±10%, 50/60Hz, 3VA max

CONFIGURATION OPTIONS
Single Loop w/Alarm (1 Sensor)
Dual Loop (2 Sensors)

CONTROL MODE OPTIONS
On-Off Cooling (2 loops)
On-Off Heating (2 loops)
Heating/Cooling
Heating w/Fixed Alarm
Cooling w/Fixed Alarm
Heating w/Tracking Alarm
Cooling w/Tracking Alarm

SET POINT 1 ADJ OPTIONS
Remote SP
Local SP
Fixed SP

SET POINT 2 ADJ OPTIONS
Remote SP
Local SP
Fixed SP

OUTPUT 1 OPTIONS
20 Amp Relay
24 VDC to drive external SSR

OUTPUT 2 OPTIONS
20 Amp Relay
24 VDC to drive external SSR

SENSOR FAULT PROTECTION
Output de-energizes with open or shorted sensor

ENVIRONMENTAL
Ambient Operating Temperature: 0 C to 70 C Relative Humidity: 5 to 90% non-condensing

1/16DIN - PANEL MTG

TOHO TTM-i4N 1/16DIN PID Temperature Controller

PRODUCT HIGHLIGHTS

DESCRIPTION
Compact (59mm depth) 1/16DIN PID Temperature Controller with advanced features including bright dual PV/SV display, Ultra-Fuzzy control mode for superior over-shoot prevention, 250ms sampling rate, Thermo-couple and PRTD sensor types. CE & RoHS compliant, UL pending. Pricing as low as $49.95 in quantity.

SENSOR OPTIONS
Type J, K, T, R, N, S, or B Thermocouple, Pt100ohm and JPt100 RTD.

CONTROL MODES
On-Off, PID or Ultra-Fuzzy for Heating, Cooling and Heating/Cooling

OUTPUT OPTIONS
Main Output 3A SPST Relay or 12VDC SSR driver

FEATURES
Large 15.2mm dimmable white PV display, 2 Event out-puts standard; multiple alarm configurations; Heating/Cooling capability; integral Timer; selectable priority displays for quick access; optional loader cable for changing controller settings via computer.

APPLICATIONS
Dryers
Environmental Chambers
Packaging Equipment
Laboratory Baths
Incubators
Pollution Control Equipment
Hot Stamping Machines
Plastic Molding Equipment
Ovens
Commercial Cooking Equipment

CONTROL TYPE
Temperature

PACKAGING
1/16DIN

MOUNTINGS
Panel Mtg

SIZE
48x48mm

DETAILED SPECIFICATIONS

INPUT VOLTAGE
100 to 240VAC, 50/60Hz

MAIN OUTPUT
SPST Relay, 3A 250VAC
12VDC SSR Driver

EVENT OUTPUTS
Two SPST Relays, 2.5A 250VAC standard - EV1 & EV2 (OUT2 for Cooling)

CONTROL MODES (USER SELECTABLE)
On-Off, PID and Ultra-Fuzzy

CONTROL ACTION (USER SELECTABLE)
Heating, Cooling, Heating/Cooling

SENSOR INPUTS (USER SELECTABLE)
K, J, T, R, N, S, B Thermocouple and Pt100, JPt100 RTD

SETTING RANGES
Temperature: Depends on sensor selected (See User Manual) Timer: 0.00 to 59.59 minutes, 0.00 to 99.59 hours

DISPLAY (PV & SV)
Process Variable (PV) - 4 digits, 7 segments Green 15.2mm height
Setting Value (SV) - 4 digits, 7 segments Red 6.6mm height

OPERATING ENVIRONMENT
Temperature: 0 to 50°C
Humidity: 20 to 90%RH (non-condensing)

KEYWORDS
digital, heat cool, heat-cool, incubator, on-off, on off, proportional, ramp-soak, ramp soak, rtd, single loop, single-loop, solid state, ssr, thermocouple, PID

TOHO TTM-004 1/16DIN Temperature Controller

PRODUCT HIGHLIGHTS

DESCRIPTION
Versatile DIN style Digital Temperature Controllers in a compact size with advanced features and functions including RS485 communications capability that allows up to 31 controllers to be connected to a single computer over a range of up to 500 meters.

SENSOR OPTIONS
Type K, J, T, R, N, S, B Thermocouple, Pt100, JPt100 RTD, 4 to 20mADC, 0 to 5VDC & 1 to 5VDC

CONTROL MODES
PID or On-Off Heating, Cooling and Heating/Cooling

OUTPUT OPTIONS
Main Output Form A Relay, 12VDC SSR driver or 4-20mADC; 1 Form A Event output standard; 2 Form A Event outputs optional

FEATURES
Self-Tuning PID, built-in timer, selectable priority displays for quick access and display masking (blind function) to prevent programming errors, optional RS-485 communications, UL, cUL, CE, & IP66 approved.

APPLICATIONS
Environmental Chambers
Packaging Equipment
Incubators
Gas Analyzers
Furnaces
Commercial Dryers
Laboratory Baths & Ovens
Plastic Molding Equipment
Chillers
Commercial Cooking Equipment

CONTROL TYPE
Temperature

PACKAGING
1/16DIN

MOUNTINGS
Panel Mtg

SIZE
48x48mm

DETAILED SPECIFICATIONS

INPUT VOLTAGE
100 to 240VAC, 50/60Hz

OUTPUT 1
SPST Relay, 3A 250VAC
12VDC SSR Driver (600Ω minimum)
4 to 20mA DC (600Ω maximum loop resistance)

OUTPUT 2
None
SPST Relay, 2.5A 250VAC
12VDC SSR Driver (600Ω minimum)

ALARM OUTPUT
SPST Relay, 2.5A 250VAC (standard)

CONTROL MODES (USER SELECTABLE)
Self-tuning PID, Auto-tuning PID, On-Off

CONTROL ACTION (USER SELECTABLE)
Heating, Cooling, Heating/Cooling

SENSOR INPUTS
Type K, J, T, R, N, S, B Thermocouple and Pt100, JPt100 RTD
Current 4 to 20mA DC (Input resistance 250Ω), Voltage 0 to 5V DC/1 to 5V DC (input resistance 500kΩ

SET POINT RANGES
Temperature: Depends on sensor selected (See Catalog)
Timer: 0.00 to 59.59 minutes, 0.00 to 99.59 hours

DISPLAY
Process Variable (PV) - 4 digits, 7 segments Green 10mm height
Setting Value (SV) - 4 digits, 7 segments Red 8mm height

OPERATING AMBIENT
0 to 50°C, 20 to 90%RH (non-condensing)

OPTIONS
RS485 Communications
CT Input

1/32DIN - PANEL MTG

TOHO TTM-002 1/32DIN Temperature Controller

PRODUCT HIGHLIGHTS

DESCRIPTION
Versatile DIN style Digital Temperature Controllers in a compact size with advanced features and functions including RS485 communications capability that allows up to 31 controllers to be connected to a single computer over a range of up to 500 meters.

SENSOR OPTIONS
Type K, J, T, R, N, S, B Thermocouple, Pt100, JPt100 RTD, 4 to 20mADC, 0 to 5VDC & 1 to 5VDC

CONTROL MODES
PID or On-Off Heating, Cooling and Heating/Cooling

OUTPUT OPTIONS
Main Output Form A Relay, 12VDC SSR driver or 4-20mADC; 1 Form A Event output standard; 2 Form A Event outputs optional

FEATURES
Self-Tuning PID, built-in timer, selectable priority displays for quick access and display masking (blind function) to prevent programming errors, optional RS-485 communications, UL, cUL, CE, & IP66 approved.

APPLICATIONS
Environmental Chambers
Packaging Equipment
Incubators
Gas Analyzers
Furnaces
Commercial Dryers
Laboratory Baths & Ovens
Plastic Molding Equipment
Chillers
Commercial Cooking Equipment

CONTROL TYPE
Temperature

PACKAGING
1/32DIN

MOUNTINGS
Panel Mtg

SIZE
24x48mm

DETAILED SPECIFICATIONS

INPUT VOLTAGE
100 to 240VAC, 50/60Hz

OUTPUT 1
SPST Relay, 3A 250VAC
12VDC SSR Driver (600Ω minimum)
4 to 20mA DC (600Ω maximum loop resistance)

OUTPUT 2
None
SPST Relay, 2.5A 250VAC
12VDC SSR Driver (600Ω minimum)

ALARM OUTPUT
SPST Relay, 2.5A 250VAC (standard)
CONTROL MODES (USER SELECTABLE)
Self-tuning PID, Auto-tuning PID, On-Off

CONTROL ACTION (USER SELECTABLE)
Heating, Cooling, Heating/Cooling

SAMPLING TIME
Standard: 500ms

SENSOR INPUTS
Type K, J, T, R, N, S, B Thermocouple and Pt100, JPt100 RTD
Current 4 to 20mA DC (Input resistance 250Ω), Voltage 0 to 5V DC/1 to 5V DC (input resistance 500kΩ

SET POINT RANGES
Temperature: Depends on sensor selected (See Catalog)
Timer: 0.00 to 59.59 minutes, 0.00 to 99.59 hours

DISPLAY
Process Variable (PV) - 4 digits, 7 segments Green 7.6mm height
Setting Value (SV) - 4 digits, 7 segments Red 5.25mm height

OPERATING AMBIENT
0 to 50°C, 20 to 90%RH (non-condensing)

OPTIONS
RS485 Communications
CT Input

1/4DIN - PANEL MTG

TOHO TTM-009 1/4DIN Temperature Controller

PRODUCT HIGHLIGHTS

DESCRIPTION
Versatile DIN style Digital Temperature Controllers in a compact size with advanced features and functions including RS485 communications capability that allows up to 31 controllers to be connected to a single computer over a range of up to 500 meters.

SENSOR OPTIONS
Type K, J, T, R, N, S, B Thermocouple, Pt100, JPt100 RTD, 4 to 20mADC, 0 to 5VDC & 1 to 5VDC

CONTROL MODES
PID or On-Off Heating, Cooling and Heating/Cooling

OUTPUT OPTIONS
Main Output Form A Relay, 12VDC SSR driver or 4-20mADC; 1 Form A Event output standard; 2 Form A Event outputs optional

FEATURES
Self-Tuning PID, built-in timer, selectable priority displays for quick access and display masking (blind function) to prevent programming errors, optional RS-485 communications, UL, cUL, CE, & IP66 approved.

APPLICATIONS
Environmental Chambers
Packaging Equipment
Incubators
Gas Analyzers
Furnaces
Commercial Dryers
Laboratory Baths & Ovens
Plastic Molding Equipment
Chillers
Commercial Cooking Equipment

CONTROL TYPE
Temperature

PACKAGING
1/4DIN

MOUNTINGS
Panel Mtg

SIZE
96X96mm

DETAILED SPECIFICATIONS

INPUT VOLTAGE
100 to 240VAC, 50/60Hz

OUTPUT 1
SPST Relay, 3A 250VAC
12VDC SSR Driver (600Ω minimum)
4 to 20mA DC (600Ω maximum loop resistance)

OUTPUT 2
None
SPST Relay, 2.5A 250VAC
12VDC SSR Driver (600Ω minimum)

ALARM OUTPUT
SPST Relay, 2.5A 250VAC (standard)

CONTROL MODES (USER SELECTABLE)
Self-tuning PID, Auto-tuning PID, On-Off

CONTROL ACTION (USER SELECTABLE)
Heating, Cooling, Heating/Cooling

SENSOR INPUTS
Type K, J, T, R, N, S, B Thermocouple and Pt100, JPt100
RTD Current 4 to 20mA DC (Input resistance 250Ω), Voltage 0 to 5V DC/1 to 5V DC (input resistance 500kΩ

SET POINT RANGES
Temperature: Depends on sensor selected (See Catalog)
Timer: 0.00 to 59.59 minutes, 0.00 to 99.59 hours

DISPLAY
Process Variable (PV) - 4 digits, 7 segments Green 12mm height
Setting Value (SV) - 4 digits, 7 segments Red 8mm height

OPERATING AMBIENT
0 to 50°C, 20 to 90%RH (non-condensing)

OPTIONS
RS485 Communications
CT Input

1/8DIN HORIZONTAL - PANEL MTG

TOHO TRM-006A 1/8DIN Digital Indicator

PRODUCT HIGHLIGHTS

DESCRIPTION
DIN style Process Indicator in a compact size with advanced features and functions including selectable parameter display screens, up to 2 event outputs and RS485 communications.

SENSOR OPTIONS
Thermocouple, RTD, Current and Voltage

CONTROL MODES
Parameter display with optional Max/min hold.

OUTPUT OPTIONS
Up to 2 relay event outputs.

FEATURES
Max/Min value hold function and digital PV input filter standard; a 12VDC sensor excitation output and a variety of transmission outputs are also available as options.

CONTROL TYPE
Temperature Indicator

PACKAGING
1/8DIN Horizontal

MOUNTINGS
Panel Mtg

SIZE
48x96mm

DETAILED SPECIFICATIONS

INPUT VOLTAGE
100 to 240VAC, 50/60Hz
24VAC/VDC ±10%, 50/60Hz

EVENT OUTPUT 1 (STD)
SPST Relay, 2.4A 250VAC

EVENT OUTPUT 2
None
SPST Relay, 2.4A 250VAC

SENSOR INPUTS
Type K, J, T, R, N, S, B Thermocouple and Pt100, JPt100 RTD
Current 4 to 20mA DC (Input resistance 250Ω), Voltage 0 to 5...
0 to 1VDC
0 to 10VDC
0 to 10mVDC

SENSOR EXCITATION OUTPUT
None
12VDC ±1VDC (0 to 50°C)

TRANSMISSION OUTPUT
1 to 5VDC
0 to 10VDC
0 to 10mVDC
4 to 20mADC
0 to 1VDC
0 to 5VDC

DISPLAY TYPE
Process Variable (PV) - 4 digits, 7 segments Green 14mm height
Setting Value (SV) - 4 digits, 7 segments Red 8mm height Function Indication - Red LED (AL1 & AL2); Green LED (COM)

DISPLAY RANGES
Depends on sensor selected (See catalog)

COMMUNICATIONS
None
RS485 (TOHO/MODBUS Protocols)

OPERATING ENVIRONMENT
Temperature: 0 to 50°C
Humidity: 20 to 90% RH (non-condensing)

STORAGE ENVIRONMENT
Temperature: -25 to 70°C
Humidity: 5 to 95% RH (non-condensing)

TOHO TTM-006 1/8DIN
Temperature Controller (Horizontal)

PRODUCT HIGHLIGHTS

DESCRIPTION
Versatile DIN style Digital Temperature Controllers in a compact size with advanced features and functions including RS485 communications capability that allows up to 31 controllers to be connected to a single computer over a range of up to 500 meters.

SENSOR OPTIONS
Type K, J, T, R, N, S, B Thermocouple, Pt100, JPt100 RTD, 4 to 20mADC, 0 to 5VDC & 1 to 5VDC

CONTROL MODES
PID or On-Off Heating, Cooling and Heating/Cooling

OUTPUT OPTIONS
Main Output Form A Relay, 12VDC SSR driver or 4-20mADC; 1 Form A Event output standard; 2 Form A Event outputs optional

FEATURES
Self-Tuning PID, built-in timer, selectable priority displays for quick access and display masking (blind function) to prevent programming errors, optional RS-485 communications, UL, cUL, CE, & IP66 approved.

APPLICATIONS
Environmental Chambers
Packaging Equipment
Incubators
Gas Analyzers
Furnaces
Commercial Dryers
Laboratory Baths & Ovens
Plastic Molding Equipment
Chillers
Commercial Cooking Equipment

CONTROL TYPE
Temperature

PACKAGING
1/8DIN Horizontal

MOUNTINGS
Panel Mtg

SIZE
96x48mm

TOHO TTM-006 1/8DIN
Temperature Controller (Horizontal)

DETAILED SPECIFICATIONS

INPUT VOLTAGE
100 to 240VAC, 50/60Hz

OUTPUT 1
SPST Relay, 3A 250VAC
12VDC SSR Driver (600Ω minimum)
4 to 20mA DC (600Ω maximum loop resistance)

OUTPUT 2
None
SPST Relay, 2.5A 250VAC
12VDC SSR Driver (600Ω minimum)

ALARM OUTPUT
SPST Relay, 2.5A 250VAC (standard)
CONTROL MODES (USER SELECTABLE)
Self-tuning PID, Auto-tuning PID, On-Off

CONTROL ACTION (USER SELECTABLE)
Heating, Cooling, Heating/Cooling

SENSOR INPUTS
Type K, J, T, R, N, S, B Thermocouple and Pt100, JPt100 RTD
Current 4 to 20mA DC (Input resistance 250Ω), Voltage 0 to 5V DC/1 to 5V DC (input resistance 500kΩ

SET POINT RANGES
Temperature: Depends on sensor selected (See Catalog)
Timer: 0.00 to 59.59 minutes, 0.00 to 99.59 hours

DISPLAY
Process Variable (PV) - 4 digits, 7 segments Green 12mm height
Setting Value (SV) - 4 digits, 7 segments Red 8mm height

OPERATING AMBIENT
0 to 50°C, 20 to 90%RH (non-condensing)

OPTIONS
RS485 Communications
CT Input

1/8DIN VERTICAL - PANEL MTG

TOHO TTM-005 1/8DIN
Temperature Controller (Vertical)

PRODUCT HIGHLIGHTS

DESCRIPTION
Versatile DIN style Digital Temperature Controllers in a compact size with advanced features and functions including RS485 communications capability that allows up to 31 controllers to be connected to a single computer over a range of up to 500 meters.

SENSOR OPTIONS
Type K, J, T, R, N, S, B Thermocouple, Pt100, JPt100 RTD, 4 to 20mADC, 0 to 5VDC & 1 to 5VDC

CONTROL MODES
PID or On-Off Heating, Cooling and Heating/Cooling

OUTPUT OPTIONS
Main Output Form A Relay, 12VDC SSR driver or 4-20mADC; 1 Form A Event output standard; 2 Form A Event outputs optional

FEATURES
Self-Tuning PID, built-in timer, selectable priority displays for quick access and display masking (blind function) to prevent programming errors, optional RS-485 communications, UL, cUL, CE, & IP66 approved.

APPLICATIONS
Environmental Chambers
Packaging Equipment
Incubators
Gas Analyzers
Furnaces
Commercial Dryers
Laboratory Baths & Ovens
Plastic Molding Equipment
Chillers
Commercial Cooking Equipment

CONTROL TYPE
Temperature

PACKAGING
1/8DIN Vertical

MOUNTINGS
Panel Mtg

SIZE
96x48mm

TOHO TTM-005 1/8DIN
Temperature Controller (Vertical)

DETAILED SPECIFICATIONS

INPUT VOLTAGE
100 to 240VAC, 50/60Hz

OUTPUT 1
SPST Relay, 3A 250VAC
12VDC SSR Driver (600Ω minimum)
4 to 20mA DC (600Ω maximum loop resistance)

OUTPUT 2
None
SPST Relay, 2.5A 250VAC
12VDC SSR Driver (600Ω minimum)

ALARM OUTPUT
SPST Relay, 2.5A 250VAC (standard)

CONTROL MODES (USER SELECTABLE)
Self-tuning PID, Auto-tuning PID, On-Off

CONTROL ACTION (USER SELECTABLE)
Heating, Cooling, Heating/Cooling

SENSOR INPUTS
Type K, J, T, R, N, S, B Thermocouple and Pt100, JPt100 RTD
Current 4 to 20mA DC (Input resistance 250Ω), Voltage 0 to 5V DC/1 to 5V DC (input resistance 500kΩ

SET POINT RANGES
Temperature: Depends on sensor selected (See Catalog)
Timer: 0.00 to 59.59 minutes, 0.00 to 99.59 hours

DISPLAY
Process Variable (PV) - 4 digits, 7 segments Green 12mm height
Setting Value (SV) - 4 digits, 7 segments Red 8mm height

OPERATING AMBIENT
0 to 50°C, 20 to 90%RH (non-condensing)

OPTIONS
RS485 Communications
CT Input

3/16DIN - PANEL MTG

TOHO TTM-007 3/16DIN Temperature Controller

PRODUCT HIGHLIGHTS

DESCRIPTION
Versatile DIN style Digital Temperature Controllers in a compact size with advanced features and functions including RS485 communications capability that allows up to 31 controllers to be connected to a single computer over a range of up to 500 meters.

SENSOR OPTIONS
Type K, J, T, R, N, S, B Thermocouple, Pt100, JPt100 RTD, 4 to 20mADC, 0 to 5VDC & 1 to 5VDC

CONTROL MODES
PID or On-Off Heating, Cooling and Heating/Cooling

OUTPUT OPTIONS
Main Output Form A Relay, 12VDC SSR driver or 4-20mADC; 1 Form A Event output standard; 2 Form A Event outputs optional

FEATURES
Self-Tuning PID, built-in timer, selectable priority displays for quick access and display masking (blind function) to prevent programming errors, optional RS-485 communications, UL, cUL, CE, & IP66 approved.

APPLICATIONS
Environmental Chambers
Packaging Equipment
Incubators
Gas Analyzers
Furnaces
Commercial Dryers
Laboratory Baths & Ovens
Plastic Molding Equipment
Chillers
Commercial Cooking Equipment

CONTROL TYPE
Temperature

PACKAGING
3/16DIN

MOUNTINGS
Panel Mtg

SIZE
72x72mm

DETAILED SPECIFICATIONS

INPUT VOLTAGE
100 to 240VAC, 50/60Hz

OUTPUT 1
SPST Relay, 3A 250VAC
12VDC SSR Driver (600Ω minimum)
4 to 20mA DC (600Ω maximum loop resistance)

OUTPUT 2
None
SPST Relay, 2.5A 250VAC
12VDC SSR Driver (600Ω minimum)

ALARM OUTPUT
SPST Relay, 2.5A 250VAC (standard)

CONTROL MODES (USER SELECTABLE)
Self-tuning PID, Auto-tuning PID, On-Off

CONTROL ACTION (USER SELECTABLE)
Heating, Cooling, Heating/Cooling

SENSOR INPUTS
Type K, J, T, R, N, S, B Thermocouple and Pt100, JPt100 RTD
Current 4 to 20mA DC (Input resistance 250Ω), Voltage 0 to 5V DC/1 to 5V DC (input resistance 500kΩ

SET POINT RANGES
Temperature: Depends on sensor selected (See Catalog)
Timer: 0.00 to 59.59 minutes, 0.00 to 99.59 hours

DISPLAY
Process Variable (PV) - 4 digits, 7 segments Green 10mm height
Setting Value (SV) - 4 digits, 7 segments Red 8mm height

OPERATING AMBIENT
0 to 50°C, 20 to 90%RH (non-condensing)

OPTIONS
RS485 Communications
CT Input