

ETR-9090, ETR-8120, ETR-8130, ETR-4120 and ETR-4130 CONTROL SPECIFICATIONS

INPUT

Display in temperature or engineering units

Thermocouple: Type J, K, T, E, B, R, S, N (selectable)

RTD: PT100 ohm DIN or JIS, 2 or 3 wire

Linear: -10 - 60mV (given span)

CONTROL FEATURES

Temperature Range: Selectable

Set Point: Full range adjustable

Secondary Output(s) Set Point: Full range adjustable

Control Modes: Selectable control modes;

- On/off
- Proportional (P)
- Proportional with manual reset
- Proportional/Integral (PI)
- Proportional/Derivative (PD)
- Proportional/Integral/Derivative (PID)

Heating and Cooling Proportional Band: 0 - 360°F/0 - 200°C

Manual Reset: 0 - 100%

Integral (Reset): 0 - 3600 seconds

Derivative (Rate): 0 - 1000 seconds

Ramp Rate: 0 - 360°F (0 - 200°C)/minute

Dwell: 0 - 3600 minutes

Anti-reset (Wind-up): Inhibits integral action outside of proportional band

Cooling (ETR-8130 and ETR-4130): Adjustable dead band from -100 to +100% of span

On/Off: Adjustable Hysteresis from 0 - 20.0% of span

Manual Mode: Configurable as open loop control should sensor no longer function

Cycle Time: 0 - 120 seconds

Sensor Break Protection: Configurable status of control output and secondary outputs

Control Action: Selectable – Direct action for cooling; Reverse action for heating

OUTPUTS

ETR-9090: Single output with optional independent secondary output

ETR-8120 and ETR-4120: Single output with 2 optional independent secondary outputs

ETR-8130 and ETR-4130: Heating and cooling outputs with 2 optional independent secondary outputs

Relay: 3A/240V maximum resistive load

Pulsed Voltage: 24VDC, 20mA, maximum

Current: 4 - 20 mA, maximum load 500 ohms

Voltage: 0 - 10V isolated, minimum impedance 500K ohms

Secondary Output(s): 14 selectable modes including process, deviation and band alarms. 2A, 240V maximum resistive load with adjustable hysteresis

INDICATION

ETR-9090: Process .4" red LED, Set point .3" green LED

ETR-8120 and ETR-8130: Process .4" red LED, Set point .3" green LED

ETR-4120 and ETR-4130: Process $\frac{5}{8}$ " red LED, Set point $\frac{1}{2}$ " green LED

Selectable Decimal Placement: For normal or high resolution display. Example: 0000; 000.0; 00.00; 0.000

°F/°C: Selectable with LED indicators (except ETR-9090) **Status Indicators:** 2 LED's - Primary Output(s) green, Secondary output(s) red

Sample Rate: 4 samples/second

POWER

Supply Voltage: 90 - 264VAC, 50/60Hz; 20-32VAC/VDC optional

Consumption: Less than 5VA

Data Retention: 10 years (EEPROM)

SPECIFICATIONS

Accuracy: $\pm 0.2\%$ of span

Control Stability: $\pm 0.15\%$ (typical) of full scale

Cold Junction Compensation: 0.1°C/°C ambient

External Resistance: 100 ohms, maximum

Normal Mode Rejection: 60dB

Common Mode Rejection: 120dB

Operating Temperature for Rated Accuracy: 14 - 122°F (-10 - 50°C)

Humidity: 0 - 90% RH (non-condensing)

Insulation: 20M ohm minimum (500VDC)

Breakdown: 2000VAC, 50/60Hz, 1 minute

Vibration: 10 - 55 Hz, amplitude 1mm

Shock: 200m/s²

ETR-9090 Dimensions:

H – 1 $\frac{7}{8}$ " (48mm)

W – 1 $\frac{7}{8}$ " (48mm)

D – 3 $\frac{3}{4}$ " (96mm)

Depth behind panel – 3 $\frac{3}{8}$ " (86mm)

Panel cutout – 1 $\frac{25}{32}$ " x 1 $\frac{25}{32}$ " (45mm x 45mm)

Weight – 6 oz. (170 grams)

ETR-8120 and ETR-8130 Dimensions:

H – 3 $\frac{3}{4}$ " (96mm)

W – 1 $\frac{7}{8}$ " (48mm)

D – 3 $\frac{1}{8}$ " (79mm)

Depth behind panel – 2 $\frac{1}{2}$ " (64mm)

Panel Cutout – 1 $\frac{25}{32}$ " x 3 $\frac{3}{8}$ " (45mm x 92mm)

Weight – 8 oz. (227 grams)

ETR-4120 and ETR-4130 Dimensions:

H – 3 $\frac{3}{4}$ " (96mm)

W – 3 $\frac{3}{4}$ " (96mm)

D – 2 $\frac{5}{16}$ " (65mm)

Depth behind panel – 2" (51mm)

Panel Cutout – 3 $\frac{5}{8}$ " x 3 $\frac{5}{8}$ " (92mm x 92mm)

Weight – 10 oz. (284 grams)

**ORDERING INFORMATION FOR 1/16 DIN ETR-9090 SMARTER LOGIC®
MICROPROCESSOR BASED TEMPERATURE CONTROLS**

ETR-9090-



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Signal Input

- 1 Thermocouple J, K, T, E, B, R, S, N
- 2 RTD PT100 ohms, Alpha = 0.00385/DIN
- 3 RTD PT100 ohms Alpha = 0.00392/JIS
- 4 Voltage -10 to 60mV or other current or voltage (specify range)



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Control Output

- 1 None
- 2 Relay rated 3A/240VAC resistive
- 3 Pulsed voltage to drive SSR, 3-32 VDC
- 5 Isolated 4-20mA linear
- 6 Isolated 0-20mA linear
- 7 Isolated 0-10VDC linear
- 8 Special order



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Alarm Output

- 1 With alarm relay rated 2A/240VAC
- 2 No alarm

Example

Standard Model:

ETR-9090-121

- Thermocouple type J, K, T, E, B, R, S, N
- Relay output
- Alarm

20-32 VDC or VAC Operation
Model Number: ETR-9090-3121

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