

## 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/s<sup>2</sup>

#### 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)