

ETR-9000 / 3000 SPECIFICATIONS

90-264 VAC, 47-63 Hz, 10 VA, 5W maximum
11-26 VAC / VDC, 10VA, 5W maximum

Signal Input

Resolution: 18 bits
Sampling Rate: 5 times / second
Maximum Rating: -2 Vdc minimum, 12 Vdc maximum
(1 minute for mA input)
Temperature Effect: $\pm 1.5 \mu\text{V}/^\circ\text{C}$ for all inputs except
mA input, $\pm 3.0 \mu\text{V}/^\circ\text{C}$ for mA input
Sensor Lead Resistance Effect : T/C: 0.2uV/ohm
3-wire RTD: 2.6 $^\circ\text{C}/\text{ohm}$ of resistance difference of
two leads
2-wire RTD: 2.6 $^\circ\text{C}/\text{ohm}$ of resistance sum of two leads
Burn-out Current: 200 nA
Common Mode Rejection Ratio (CMRR): 120dB
Normal Mode Rejection Ratio (NMRR): 55dB
Sensor Break Detection: Sensor open for TC, RTD and
mV inputs, Sensor short for RTD input, below 1 mA for
4-20 mA input, below 0.25V for 1 - 5 V input, unavailable
for other inputs.
Sensor Break Responding Time: Within 4 seconds for
TC, RTD and mV inputs, 0.1 second for 4-20 mA and
1 - 5 V inputs.
Relay Rating: 2A / 240 VAC, life cycles 200,000 for
resistive load
Pulsed Voltage: Source Voltage 5V, current limiting
resistance 66.

Linear Output Characteristics

Type	Zero Tolerance	Span Tolerance	Load Capacity
4-20 mA	3.8-4 mA	20-21 mA	500 ? max.
0-20 mA	0 mA	20-21 mA	500 ? max.
0-5 V	0 V	5-5.25 V	10 K ? min.
1-5 V	0.95-1 V	5-5.25 V	10 K ? min.
0-10 V	0 V	10-10.5 V	10 K ? min.

Linear Output

Resolution: 15 bits
Output Regulation: 0.02 % for full load change
Output Settling Time: 0.1 sec. (stable to 99.9 %)
Isolation Breakdown Voltage: 1000 VAC
Temperature Effect: ± 0.01 % of SPAN / $^\circ\text{C}$
Triac (SSR) Output
Rating: 1A / 240 VAC
Inrush Current: 20A for 1 cycle
Min. Load Current: 50 mA rms
Max. Off-state Leakage: 3 mA rms
Max. On-state Voltage: 1.5 V rms
Insulation Resistance: 1000 Mohms min. at 500 Vdc
Dielectric Strength: 2500 VAC for 1 minute

Alarm (Output 2)

Alarm Relay: Form A, Max. rating 2A/240VAC, life cycles
200,000 for resistive load.
Alarm Functions: Dwell timer, Deviation High / Low Alarm,
Deviation Band High / Low Alarm, Process High / Low
Alarm,
Alarm Mode: Normal, Latching, Hold, Latching / Hold.
Dwell Timer: 0.1-4553.6 minutes

Data Communication

Interface: RS-232 (1 unit), RS-485 (up to 247 units)
Protocol: Modbus Protocol RTU mode
Address: 1 - 247
Baud Rate: 2.4 ~ 38.4 Kbits/sec
Data Bits: 7 or 8 bits
Parity Bit: None, Even or Odd
Stop Bit: 1 or 2 bits
Communication Buffer: 160 bytes

User Interface

Single 4-digit LED Displays: 10 mm (ETR-3000, 9000)
Keypad: 3 keys (ETR-3000), 4 keys (ETR-9000)
Programming Port: For automatic setup, calibration and
testing
Communication Port: Connection to PC for supervisory
control

Control Mode

Output 1: Reverse (heating) or direct (cooling) action
Output 2: PID cooling control, cooling P band 50 ~ 300%
of PB, dead band -36.0 ~ 36.0% of PB
ON-OFF: 0.1 - 90.0 ($^\circ\text{F}$) hysteresis control (P band = 0)
P or PD: 0 - 100.0 % offset adjustment
PID: Fuzzy logic modified Proportional band 0.1 ~ 900.0 $^\circ\text{F}$.
Integral time 0 - 1000 seconds
Derivative time 0 - 360.0 seconds
Cycle Time: 0.1 - 90.0 seconds
Manual Control: Heat (MV1) and Cool (MV2)
Auto-tuning: Cold start and warm start
Failure Mode: Auto-transfer to manual mode while sensor
break or A-D converter damage
Ramping Control: 0 - 900.0 $^\circ\text{F}$ / minute or 0 - 900.0 $^\circ\text{F}$ /
hour ramp rate

Digital Filter

Function: First order
Time Constant: 0, 0.2, 0.5, 1, 2, 5, 10, 20, 30, 60 seconds
programmable

Environmental & Physical

Operating Temperature: -10 $^\circ\text{C}$ to 50 $^\circ\text{C}$
Storage Temperature: -40 $^\circ\text{C}$ to 60 $^\circ\text{C}$
Humidity: 0 to 90 % RH (non-condensing)
Insulation Resistance: 20 Mohms min. (at 500 VDC)
Dielectric Strength: 2000 VAC, 50/60 Hz for 1 minute
Vibration Resistance: 2 10 - 55 Hz, 10 m/s for 2 hours
Shock Resistance: 2 200 m/s (20 g)
Moldings: Flame retardant polycarbonate
Mounting: ETR-3000 - panel mount, cutout 7/8 x 1-25/32"
(22 X 45 mm)
ETR-9000 - panel mount, cutout 1-25/32 x 1-25/32"
(45 X 45 mm)
Weight: ETR-3000 --- 120 grams
ETR-9000 --- 140 grams

Approval Standards

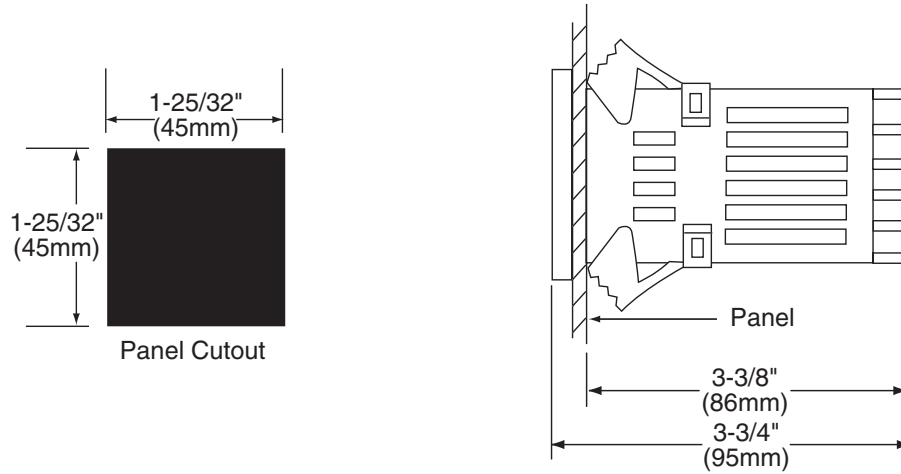
Safety: UL61010C-1
CSA C22.2 No. 24-93
EN61010-1 (IEC1010-1)

Protective Class:

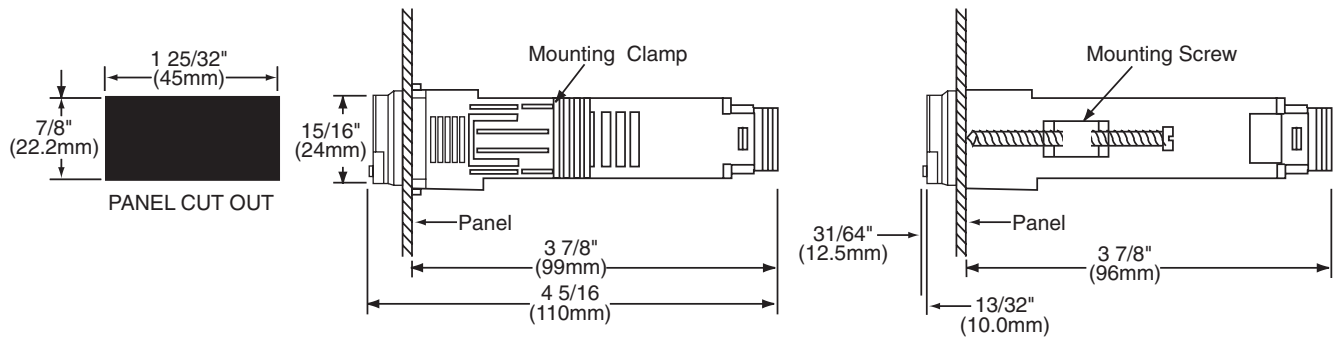
NEMA 4X (IP65) front panel for C21,
IP30 front panel for C91, all indoor use,
IP 20 housing and terminals
EMC: EN61326

ETR-9000/3000 DIMENSION SPECIFICATIONS

ETR-9000



ETR-3000



Controls are supplied with mounting clamp and mounting screws.
 Release the mounting clamp by depressing the ends of the clamp together.
 The mounting screws are to be used in applications that require
 NEMA 4X rating.

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 Specialists"

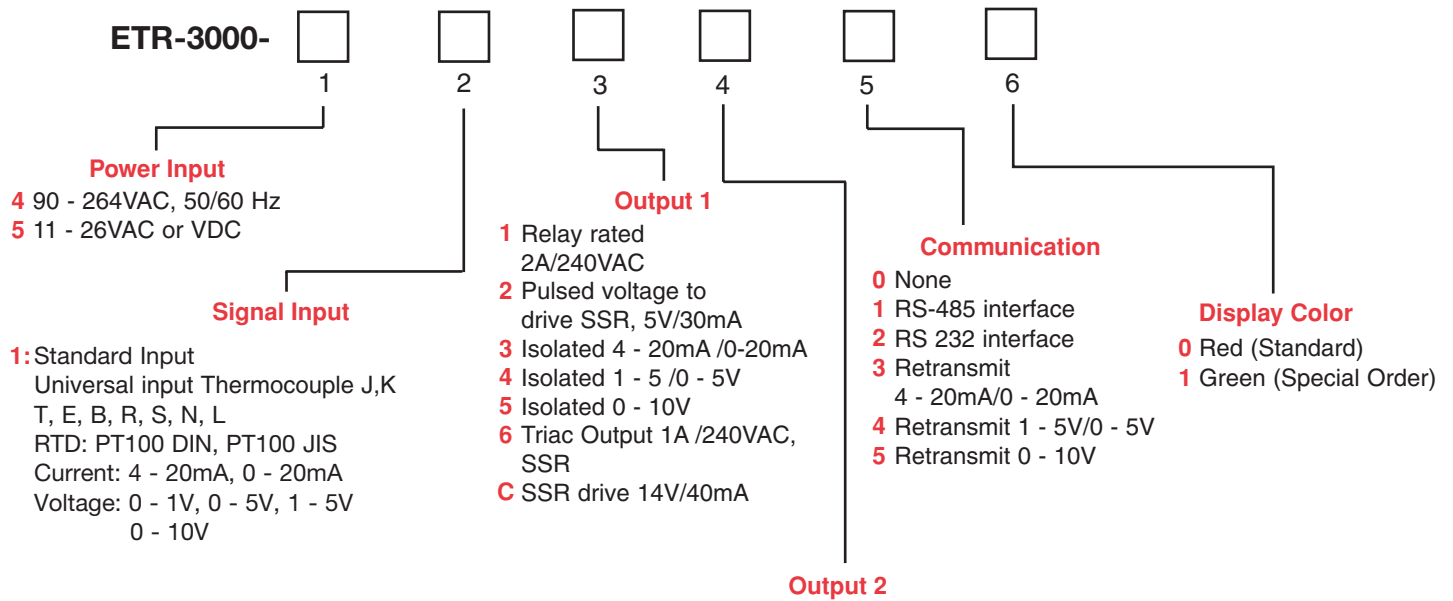


GORDO SALES, INC.

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NOTE: All Dimensions in Inches (mm)

**ORDERING INFORMATION FOR ETR-3000 SMARTER LOGIC®
MICROPROCESSOR BASED TEMPERATURE CONTROLS**



Example:

Standard Model

ETR-3000-412100

- 90 - 264VAC Operating Voltage
- Input: Set 1 Universal Input
- Output 1: SSR Drive
- Output 2: Relay
- Red Display

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