



**thermo-electra**

measurement and control technics



**The Tracker 211**  
A Budget Priced  
Universal Input Panel Indicator  
for Temperature and Process Measurement

# TRACKER 211 PANEL INDICATOR

## One Versatile Indicator Many Applications

### Transducer Excitation Supplies

Fitted as standard to power both pressure/strain gauge (10VDC) sensors or two wire (24VDC) 20mA loops.

**Universal Input**  
For Thermocouple, RTD, 20mA, 10v and 100mV signals.

### Universal Power Input

Wide ranging 90 to 265 VAC input allows world-wide installation. Low voltage AC/DC option available.

### Clear Display

The flat, slightly recessed 4 digit display together with high brightness red or green LEDs ensure maximum visibility even in difficult lighting conditions.

### Units of Measurement

Engineering unit labels are supplied for the most common measurements including temperature, flow, distance, power and pressure.

### Rugged Enclosure

The enclosure uses flame retarding (VO) materials and the front panel conforms to IP65. Less than 110mm depth behind the panel.

### Configuration Buttons

Two hidden buttons behind the front panel enable full configuration.

### Green Display (Optional)

Green LEDs to cater for differing environments.

### Front Panel Buttons

Front Panel Buttons can be fitted to allow fast and easy access to the alarm setpoints or when the Tare, Zero or Max/Min functions are to be used.



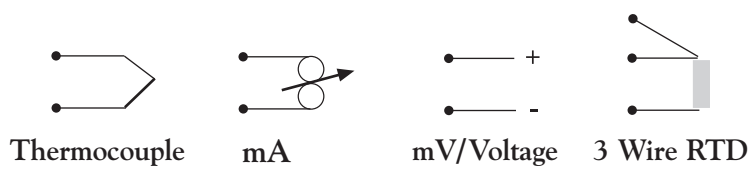
## FEATURES

- Low Cost
- Space Saving - 110mm Deep
- One Alarm Relay Fitted
- Transmitter & Transducer Supplies

## OPTIONS

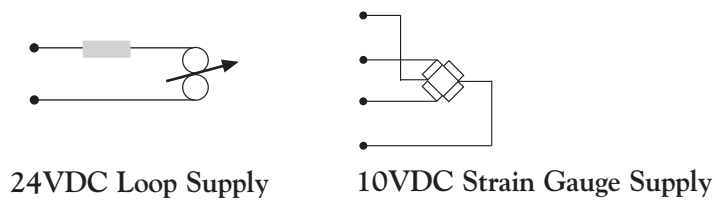
- Up to 3 Alarm Relays
- Isolated Analogue Output
- Low Voltage
- Front Panel Buttons

# TRACKER 211 FEATURES



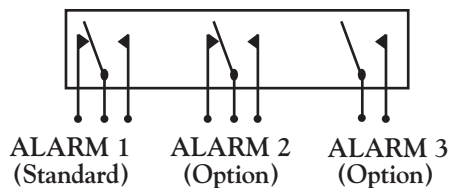
## Universal Input

The Tracker 211 can be directly connected to most popular process sensors including Thermocouple, RTD, 20mA loop Transmitters, DC signals up to 100mV and 10V. Temperature can be displayed in °C or °F to 0.1 degree resolution. Millivolt, 10 Volt and 20mA DC signals can be scaled to engineering units using any portion of the -1999 to 9999 display range (with an adjustable decimal point position). There are six linearised thermocouple ranges for types K, T, J, N, R and S. Thermocouple inputs have automatic cold junction compensation (CJC) with up-scale sensor burnout detection. Two RTD ranges are available. Zero, Tare and Max/Min memory functions are available on versions fitted with front panel buttons.



## Sensor Excitation

An isolated 24VDC transmitter is provided as standard to supply power for 2 wire (4-20mA) sensors. In addition a regulated 10VDC (50mA) output is provided for strain gauge type sensors such as pressure transducers and load cells.



## Alarm Relays

The Tracker 211 has one alarm relay fitted as standard and can be fitted with up to three alarm relays. Setpoints can be set at time of configuration or can be adjusted using the hidden buttons behind the front panel. If the setpoints are to be adjusted frequently, front panel buttons can be fitted as shown above. Each alarm can be configured to be high or low acting.



4 - 20mA

## Analogue Output (Optional)

The measured value can be transmitted as a linear 4-20mA signal to other devices such as chart recorders or data loggers. The output can be scaled to any portion of the display range e.g. 4-20 mA = 500 to 800 (psi). The analogue output always follows the displayed value, so when using Thermocouples and RTDs, the analogue output is linear to temperature.



## Configuration

The instrument can be configured using front panel or concealed buttons, which are situated behind the front panel. The Tracker 211 prompts the user for each set-up parameter. For users that need to configure many units, a Windows compatible software program is available for set-up, storage and downloading to the Tracker 211. A special adapter lead can be provided to connect an RS232 interface on the computer to the programming port on the Tracker 211.

# Data Track

## Display

Type: 14.2mm high brightness red LED (green option)  
 Range: 4 digit ( -1999 to 9999 )  
 Update rate: 2 per second

## A/D Converter

Type: Dual slope integrating with auto zero  
 Conversion rate: 100mS  
 Common mode rejection: >150dB  
 Series mode rejection: >70dB (50 & 60Hz)

## Thermocouple Inputs

CJC accuracy: Better than 1°C after 30 minutes  
 Open circuit sensor detection: Upscale  
 Engineering units: °C or °F  
 Measurement resolution: 1 or 0.1°C/°F

Thermocouple	Accuracy Including Linearisation		
	Range (°C)	Worst case	Typical @ 25°C
Type J Fe/NiCu	-210 to 1200°C	±1.0°C	±0.5°C
Type K NiCh/Ni/Al	-270 to 1372°C	±1.0°C	±0.5°C
Type T Cu/CuNi	-270 to 400°C	±1.0°C	±0.5°C
Type N Nicrosil-Nisil	-200 to 1300°C	±1.0°C	±0.5°C
Type S Pt10%-RhPt	-50 to 1767°C	±2.0°C	±1.2°C
Type R Pt13%-Rh Pt	-50 to 1767°C	±2.0°C	±1.2°C

## Resistance Thermometers

Configuration: 3 wire  
 Excitation current: 0.25mA (nominal)  
 Engineering units: °C or °F  
 Measurement resolution: 1 or 0.1 °C or °F

RTD Type	Accuracy Including Linearisation		
	Range (°C)	Worst case	Typical @ 25°C
Pt100 (alpha=385)	-200 to 850°C	±0.8°C	±0.5°C
Pt100 (alpha=392)	-200 to 457°C	±0.8°C	±0.5°C

## Maths Functions (Front panel buttons must be fitted)

Tare or Zero (programmable)  
 Max/Min memory.

## Sensor Excitation Supplies

24v (Nom) Two wire transmission supply (35mA)  
 10v Regulated bridge supply (35mA)

## Safety and EMC

Safety: EN61010  
 Susceptibility: EN50082-2  
 Emissions: EN50081-1  
 CE Certified 2000



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## Voltage & Current Inputs

Ranges: ±20mA, ±100mV, ±10V DC.  
 Scaling: Any portion of the display range (decimal point in any position)  
 Accuracy: ±0.1% (worst case), 0.05% typical @ 25°C ambient  
 Drift with temperature: <200ppm/°C  
 Impedance (Ohms): <5(mA), >100M(mV), >1M(Volt)

## Analogue Output (Option)

Output: 4 to 20mA  
 Maximum output: 22mA  
 Temperature drift: <200ppm  
 Accuracy: 0.4% of span (worst case)  
 0.2% typical @ 25°C ambient  
 Maximum load: 500 Ohms  
 Resolution: 0.02mA

## Alarm Relays (Relays 2 & 3 are optional)

Relays 1 & 2: Change over contacts  
 Relay 3: Normally open contacts  
 Rating (all relays): 1 Amp @ 250VAC, 5 Amp @ 30VDC

## Physical/Mechanical

Front panel: Protection to IP65  
 Dimensions (mm): 48(H) x 96(W) x 100(D)  
 Panel cut-out (mm): 45(H) x 93(W)  
 Weight: 0.4Kg (max), packed weight 0.55Kg

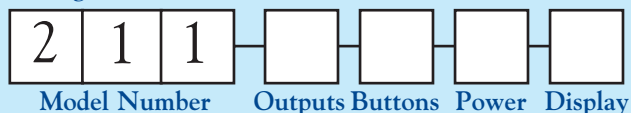
## Environmental

Temperature: 10-50°C operating, -10 to 70°C storage  
 Humidity: 0-95% RH non condensing.



Tracker 211 indicators have been tested and comply with the European Electromagnetic Compatibility Directives and safety requirements. The units are CE marked.

### Ordering Code



**Outputs** A One Alarm Relay (Fitted as Standard)  
 B Two Alarm Relays  
 C Three Alarm Relays  
 D Analogue Output (1 Relay Fitted as Standard)  
 E Analogue Output + 1 Alarm relay (2 relays in total)  
 F Analogue Output + 2 Alarm relay (3 relays in total)

**Buttons** N = Not Fitted B = Fitted  
**Power** 1 = 90-256VAC (50/60Hz), 2 = 12-32VDC/AC  
**Display** R = Red (Std), G = Green (Optional)

**Example** 211-D-B-1-R  
 Tracker 211 with 1 alarm relay, analogue output and front panel buttons fitted. Mains powered with red display