

- \* PROVIDES PRECISION 10VDC (120mA) FOR STRAIN GAGE EXCITATION
- \* DIRECTLY ACCEPTS ALL THERMOCOUPLE SENSORS
- \* 0.54 EASY TO READ 6 CHARACTER LED DISPLAY
- \* 14 SEGMENT DISPLAY FOR TRUE ALPHANUMERICS
- \* 10 AMP S.P.D.T. ALARM CONTACTS

### GENERAL DESCRIPTION

The Model 3011 Strain Gage, Temperature Indicator/ Controller accepts temperature inputs from T, J, E, K, N, R, S and B type thermocouples, and strain gage millivolt inputs between  $\pm 125\text{mV}$ .

To measure temperature, simply specify the thermocouple type and  $^{\circ}\text{C}$  or  $^{\circ}\text{F}$ . Thermocouple curves are linearized displaying the temperature within  $\pm 0.2^{\circ}\text{C}$ .

Strain Gage measurements are made by connecting the 4 wire bridge directly. The unit is calibrated by applying the desired min. and max. mV range to the 3011 and configuring what is to be displayed in engineering units. All programming is done via the front keypad. The +10V excitation supply may power up to four 350 Ohm cells.



An optional 24 volt VDC power output is available to power an external transmitter. Operating temperature range is from 0 to  $70^{\circ}\text{C}$ .

The 3011 is housed in an 1/8 DIN aluminum housing with a splash proof front panel. The six digit 0.54 inch high LED display provides easy viewing under all ambient light conditions and it's 14 segment alphanumeric display provides plain English prompting during configuration. Five active characters display process values between 99999 and -19999. The sixth character displays a "C", an "F" when measuring temperature, a zero or a single character descriptor such as a (#).

Other selectable features include: up to 4 alarm points with 10 amp SPDT contacts, flashing display on alarm, security code lockout, latching relays, process peak and valley, and alarm acknowledgement.

## **SPECIFICATIONS** MODEL 3011

### TC THERMOCOUPLES:

TYPE	°C	°F
J	-210 to 1200	-346 to 2192
K	-270 to 1372	-454 to 2501
T	-270 to 400	-454 to 752
E	-270 to 1000	-454 to 1832
R	-50 to 1768	-58 to 3214
S	-50 to 1768	-58 to 3214
N	-270 to 1300	-454 to 2372
B	125 to 1820	275 to 3308

### MILLIVOLTS:

INPUT RANGE	±125 mV
-------------	---------

MILLIAMPS: VIA 5 OHM SHUNT, 25mA MAX.

### **INPUT**

Open Input Indication:

Input goes upscale, display indicates "+OVERF"

Impedance: 90 Megaohms

Configuration: Thermocouple type, °F or °C, selected from keypad; Millivolt inputs, calibrated from keypad (display #, etc.)

### **PERFORMANCE**

Cold Junction Compensation: Digitally compensated to less than 0.1°C from -40 to 85°C.

Common Mode Rejection: Greater than 120 dB at 50/60 Hz

Normal Mode Rejection: Greater than 64 dB at 50/60 Hz

Temperature Effect Zero: ±0.01% of reading per °C

Temperature Effect Span: ±0.01% of reading per °C

Operating Temperature: 0 to 70°C

Failsafe Operation: Relay coils are energized in nonalarm condition, relay de-energizes on alarm or power failure. 3db@ 3Hz samples @ 5Hz

### **DISPLAY**

Bright red LED, 0.54 inch high, 14 segment alphanumeric characters. Five active positive digits, four active negative digits, and one digit to indicate °C, °F or to be used as a one digit descriptor or fixed zero; display provides plain English prompts during configuration.

Display Update: 10Hz

Display Resolution: 0.1°C or °F for temperature inputs; +9999 to -1999 in 1 count steps

A/D Resolution: 20 bits

### **CALIBRATION**

Accuracy: ±0.2°C or ±microvolts for mV inputs

**BULLETIN 990027-0001 2/99**

### **ENCLOSURE**

1/8 DIN, polycarbonate bezel, aluminum body, splash proof front panel. Dimensions: 1-15/16" H x 3-3/4" W x 6-1/2" D

### **ALARMS**

**Status Indication:** Front panel LED's, flashing display, horn; flashing display and horn active or inactive, menu selectable

**Points:** 0, 2, or 4 independently set trip and reset points (100% hysteresis); Alarm action high or low determined by setting trip and reset points

**Latching:** All alarms can be latching or non latching, menu selectable, reset from keypad

**Audible Alarm:** An audible alarm can be enabled or disabled for each channel during configuration; Options include: **1.** Always sound while in alarm, **2.** Sounds while in alarm but can be reset from keypad, **3.** Sounds during and continues after an alarm condition, must be reset from keypad, **4.** Sounds going into or coming out of alarm, continues sounding until acknowledged

**Contacts:** SPDT (form C) relays; 10 amps, 250 VAC; 8 amps, 24 VDC resistive; 1/3 HP, 120 VAC; 1/2 HP, 240 VAC

### **POWER / VOLTAGE**

**Connections:** 15 position, plug-in terminal block for power and relay contacts; 6 position, plug-in terminal block for input and excitation voltage; 24 to 14 AWG

**Excitation Voltage: Specify (-SG)** isolated 10 VDC at 120 mA or **(-TX)** 24VDC at 100 mA (factory set); Current limit 150 mA; Fine adjustment pot at rear of enclosure; Temperature effect 43 ppm per °C typ., 250 ppm per °C max.; Isolation strength: 500 VAC

**Power Requirement:** 90 to 140 VAC, 50/60 Hz, 10VA or 120-190VDC

### **SECURITY PASSWORD**

6 digit security password to enter configuration menu, user selectable, enabled or disabled by internal switch setting

**WARRANTY:** 2 YEARS *Made in USA*

### **ORDERING INFORMATION**

3011-0	indicator only
3011-2	indicator / controller with 2 alarms
3011-4	indicator / controller with 4 alarms
-SG	Strain gage 10V Excitation
-TX	Transmitter 24V Loop Power
-NE4C	NEMA 4 Cover
-NE4S	NEMA 4X Enclosure (1 Unit)
-NE4D	NEMA 4X Enclosure (2 Units)
-NE7	Explosion Proof Housing
-M36G	2" Pipe Mount Kit (NE4S,NE4D,NE7)

## **DEVAR Inc.**

706 Bostwick Ave, Bridgeport, CT 06605-2396  
TEL: 203-368-6751, TOLL FREE 1-800-566-6822  
FAX: 203-368-3747 <http://www.devarinc.com>  
e-mail us at: [info@devarinc.com](mailto:info@devarinc.com)