**FC-33 DC SELECTABLE INPUT ISOLATED SIGNAL CONDITIONER**

**Description:**
The FC-33 is a DIN rail mount, selectable input/output signal conditioner with 1500VDC isolation between input and output and 1500VDC isolation from 24 volt power and input/output. The field configurable input/output types allow a wide ranging capability for 0 - 5V, 0 - 10V, 0 - 20mA, 4 - 20mA.

The FC-33 has user selectable factory-calibration, but also has OFFSET (zero) and SPAN (full scale) adjustments of the input signal. If your application requires, different span or offset (i.e. 3.6mA offset and 19.6mA span) you can adjust accordingly.

**Application:**
The FC-33 field configurable isolated input/output signal conditioner is useful in eliminating ground loops and interfacing sensors to our PLC analog input modules. The FC-33 has 8 way isolation, this feature solves many types of configuration problems. For example, the signal conditioner can be configured for sinking input and sourcing output. It also allows signal translation from current input to voltage output or voltage input to current output.

**LEVEL LED:**
This LED is a powerful tool when setting up the signal conditioner. During normal operation the LED will blink at a proportional rate to the selected input signal level. When performing field calibration the LED is used for indication of the internal calibration process.

**CAL - Pushbutton:**
This pushbutton along with various switch settings, allows you to calibrate the signal conditioner for your application or restore factory default calibration.

**Input Selection:**
The signal conditioner can be configured for either DC milliamps or DC volts. Input and output signal types are 0 - 5V, 0 - 10V, 0 - 20mA, 4 - 20mA.

**Input Ranges**
- 0 - 5V
- 0 - 10V
- 0 - 20mA
- 4 - 20mA

**Output Ranges**
- 0 - 5V
- 0 - 10V
- 0 - 20mA
- 4 - 20mA

**Switch Positions**
- 1: 0 - 5V
- 2: 0 - 10V
- 3: 0 - 20mA
- 4: 4 - 20mA

**Factory Default Settings**
- 0 - 20mA
- 0 - 20mA

**Operating Specifications**
- **Input Ranges:**
  - 0 - 5V
  - 0 - 10V
  - 0 - 20mA
  - 4 - 20mA

**Specifications**
- **Input Impedance:**
  - 50 ohms resistance
- **Output Impedance:**
  - 50 ohms resistance
- **Load Impedance:**
  - 50 ohms (minimum), 50 ohms (maximum)
- **Maximum Load / Current:**
  - 21mA (for mA output)
- **Output Current:**
  - 21mA Maximum (for mA output)
- **Approximate Field Calibration Range:**
  - 0 - 10V (±5%), 0 - 20mA (±5%)
- **Noise Immunity:**
  - 250VAC @ 50Hz
- **Shock:**
  - IEC 68-2-24

**Adjustments**
The FC-33 has built-in self-calibration, but also has OFFSET (zero) and SPAN (full scale) adjustments of the input signal. If your application requires, different span or offset (i.e. 3.6mA offset and 19.6mA span) you can adjust accordingly.

**Application Adjustments**
**Calibrating the Input Signal Level -**
1. Select the signal range (i.e. 4 - 20mA).
2. Connect 24 volt power to the signal conditioner.
3. Connect the minimum input signal level.
4. Turn Switch 2 ON, press and hold the CAL pushbutton until the LEVEL LED comes ON steady (approx. 3 seconds), then release immediately. If the pushbutton is NOT released while the LEVEL LED is ON steady, the signal conditioner will return to factory calibration.
5. Repeat above sequence for maximum input signal.
6. Turn Switch 2 OFF.

**General Specifications**
- **Accuracy vs. Temperature:**
  - ±0.05% FS (±0.05°C)
- **Input Power:**
  - 5VDC ± 10% @ 50mA
- **Recommended Fuse:**
  - 3.15A Time Delay Series
- **Isolation:**
  - 1000VDC input - output
  - 2000VDC power - input
  - 2000VDC power - output
- **Maximum Inaccuracy of Output:**
  - 0.032A Littelfuse 300V
- **Operating Temperature:**
  - 0 to 60°C (32 to 140°F)
- **Operating Humidity:**
  - 5 to 90% (non-condensing)
- **Environmental Air:**
  - 80 - 102%
- **Input Ranges:**
  - 0 - 25%
- **Output Ranges:**
  - 0.05% FSO at 25°C
  - ±0.1% current input
  - ±0.1% current output
- **Voltage Range:**
  - 80 - 102%
  - 0 - 2.5V (0 - 5V Mode)
  - 0 - 2.5V (0 - 10V Mode)
  - 0 - 2.5V (0 - 15V Mode)
  - 0 - 2.5V (0 - 20V Mode)
- **Current Range:**
  - 0 - 25mA
**NOTE:** All data 0-60°C except where specified.