

Calibration notes

The two types of calibration (voltage calculation and sensor readings) can give accuracy problems. The voltage calculation method could be off with slight variations of system components, including the sensor. The sensor reading method could be off as it can be difficult to create two different environments sufficiently far apart to make the readings at the ends of the range more accurate. As a result slight tweaking may be needed.

Order part number

SPCM-12 SPCM with 12V wall power adapter
SPCM-24 SPCM with 24V wall power adapter

Spare wall power adapters

WA12 12V adapter
WA24 24V adapter

Safety Information;

No EMS product is designed to be the sole element for critical or human safety applications. Such applications should always be designed with redundancy.



Sentry Process Control Meter



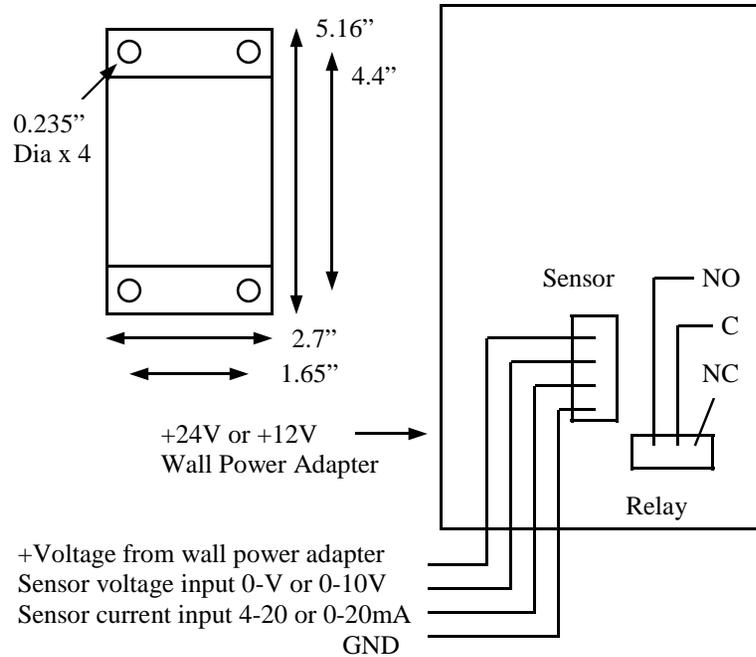
The Sentry Process Controller monitors a sensor output (voltage or current), displays a reading in user determined units, and operates a relay if the threshold set point is surpassed.

Features

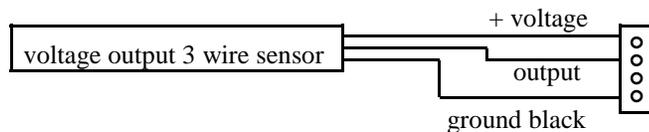
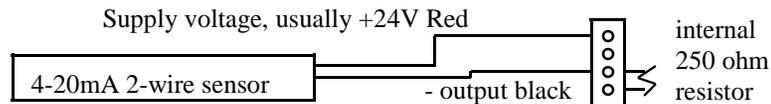
- Voltage or current sensor input
- LCD display for displaying the process value, setpoint, and relay operation.
- Three button keypad for entering setpoint adjustments and programming.
- SPDT 5A relay
- Wall mountable enclosure
- +24V or +12V wall power adapter for unit operation and sensor power.
- Fixed five count hysteresis and averaging.
- Selectable decimal point

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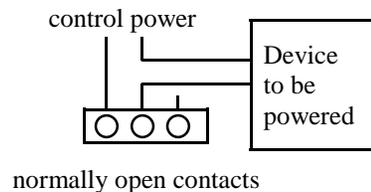
Dimensions and Wiring



CAUTION: Do not exceed 10V on the voltage input or 5V on the current input



Sentry Process Control Monitor wired to switch power on when the set point value is exceeded.



Programming and Calibration

Press L and R arrows to enter program mode
Use L or R to adjust and Enter to select

1. Set input type 1 = Voltage, 2 = current
2. Set decimal point 0,1,2,3,4
3. Select lower display value
4. Select lower measured value
5. Select upper display value
6. Select upper measured value

The set point level can be changed at any time by simply pressing either the left or right arrows. Once the new value has been selected, simply press the enter button to return to the run mode.

Display selection

The display values are what is meaningful to the user. For example, -10.0 to 120.0 for a temperature range or 0 to 100 for humidity. The full four digit display range does not need to be used. For example temperature could be 120 to -10.

Measured selection

The measurement LSB corresponds to a voltage of 2.44mV for a voltage input and 1.22mV for a current input. For example, a 5V input would give a value of $(5/0.00244) 2049$. A 10mA current input will give a reading of $((250 \text{ ohms} * .01\text{mA}) = 2.5\text{V}$ which when divided by .00122) also produces a value of 2049.

Examples:

A temperature sensor with a 0-5V output with a range of -40 to 150 degrees (0V = -40 and 5V = 130). The lower measurement value would be selected as zero for a display of -50. The upper measurement value of 2049 ($5\text{V}/0.00244$) would be selected.

A Humidity sensor with a 4-20mA output with a range of 0-100 (4mA = 0% humidity and 20mA = 100% humidity). The lower measurement value would be selected as $(4\text{mA over } 250 \text{ ohms} = 1\text{V} = 820)$ for a display of 0. The upper measurement value of $(20\text{mA} = 5\text{V across } 250 \text{ ohms or } 5\text{V}) 5\text{V}/0.00122) 4095$ (the upper limit) would be selected.

Calibration can be done without calculating the sensor output to display values. A two point calibration can be done using some low value input and simply pressing enter to accept the current reading. Then proceed to step 6 to select the current reading for a high value. Better accuracy is obtained when the high and low measurements are further apart.

Greater accuracy may require adjusting the display values slightly to match the sensor to the meter.