



Illustration 1: Display with sensor

Digital high current panel meter

P/N 1800B

Features:

- ⌚ Current range +/- 130 Amps with standard sensor shown
- ⌚ 4 Digit Ultra Bright Red Display
- ⌚ Measures current True RMS and +/-DC
- ⌚ Waterproof durable plastic enclosure
- ⌚ Wire connections
- ⌚ Nonvolatile current scaling
- ⌚ Connects directly to Non contact current sensors
- ⌚ Single supply +5.3V to 24V operation 40mA
- ⌚ Push button mode selection
- ⌚ Non-reflective optical Red Filter

Applications:

- ⌚ Monitoring current
- ⌚ True RMS AC current measurement
- ⌚ Battery current monitoring
- ⌚ Voltage Monitoring both AC true RMS and +/-DC
- ⌚ Customizable on-board microprocessor

Specifications

Parameter		
Operating Voltage	5.3v to 24v	
Power Supply Current	50 mA Max	
Onboard regulator output voltage	5.0Vdc	
Scale range	1 to 255 mv/Amp	
Measurement Range	0 to 5v	
Offset (in Offset Mode)	2.5v	
AC RMS bandwidth	400Hz	
Offset Hysteresis	Depends on sensor	Typically < 1/2 amps
Digit Height	.4"	
Number of Digits	4	
Mounting Plate Dimensions	3.56" x 1.65"x1.00"	
Suggested Mounting aperture	3.0" x 1.35"	
Measurement Resolution	10 Bits	
Measurement Speed	5 updates per second	
Input Impedance at Vin	50k/50k	50k to gnd 50k to +5v
Measurement current range	Sesnsor dependent	
With sensor shown	+.- 140Amps	

Input/Output Pins:

Pin	Name	Function
1	Vin	Input sensing voltage (0 to 5v) analog input (White)
2	Gnd	Unit ground output (Black)
3	+5v	+5v output to Hall effect current sensors (Red)
1	Gnd	Power Supply Ground input (Black)
2	V+	Power Supply DC power input (Red)

Description

The devicecraft 4 Digit display was design to operate with the hall effect current sensors. The device can also measure DC voltage with a 0 to 5 volt DC input range. With a 2.5v offset reference the device can measure true AC RMS and +/- 2.5v DC. The current measurement range depends on the type of hall effect sensor chosen. With the sensor shown sensor the DC current measurement range is +/- 140 Amps DC or 98 Amps RMS.

Wiring

Connect DC power source to red and black wires of unit. Pass wire to measue current though current sensor. Select mode and scaling.

Scale Factor

The devicecraft 4 digit display can readily be connected to various devicecraft 5v hall effect current sensors. Each version of current sensor has a calculated scale factor. The scale factor is in millivolts/Amp. Holding down the toggle switch for more than 5sec will activate the scale factor mode. A scale factor of 1 to 255 mV/Amp can then be entered. Once the desired scale factor has been reach the button is then left open for 6sec and the display will resume operation. Waiting 4sec while in scale mode will reverse the direction of incrementation. The display mode should then be re-entered. The display mode and scale factor are stored in non-volatile EEprom and do not need to be re-entered on power cycling.

Cycling the power will flash display the mode and scale factor.

Modes 0 to 2 do not apply the scale factor. Modes 3 and 4 divide the final calculated voltage my the scale factor.

Example:

Gain 40mv/Amp RMS mode

Hold down mode button 5sec to enter Scale Factor Mode.

Hold down mode button till c040 is reached.

Release button and wait 5sec

Press mode button till (c Ac) is displayed

Cycle power, if desired, to show mode and scale.

When looping the wire more than once, though the aperture, the scale can be multiplied to read the correct current. Increasing the number of loops improves low range accuracy.

Power Supply

The power supply for powering the unit does not need to be accurate. A 5v DC regulator proceeds the DC input voltage, regulating the voltage down to 5.00v. The on-board regulator is current limited to 100mA.

Mode Table

Mode	Function	
0 s dc	0 to 5v DC voltage sensing	
1 s Ac	RMS AC voltage sensing	2.5v virtual ground
2 s-dc	-2.5v to 2.5v voltage sensing	2.5v virtual ground, below 2.5v negative, above 2.5v positive
3 c-dc	+/- DC current sensing	Customizable scale factor
4 c Ac	AC + DC RMS current sensing	Customizable scale factor