

# How to Interface Model 501 UV-Biometer, Version 3 to Campbell Datalogger CR10

## APPLICATION NOTE 118

### Connections

The 501 can be measured differentially only when the thermostat feature is used. In this case, be aware of its potential for high power drain on its power supply.

<b>501</b>	<b>.....CR10</b>
Red	.....2H
	.....2L
Brown	.....3H
Orange	.....3L
Black	.....12V
Blue	.....G
Yellow	.....12V
Green	.....G

If the thermostat feature will not be used, do not connect the yellow or green leads. Insulate the ends of these leads to prevent shorting.

If the thermostat feature is to be switched off at night, a 12 volt switching circuit can be added to the 501 cable by Campbell Scientific. If a switching circuit has been added, the following wiring applies.

Yellow	.....12V
Green	.....G
Purple	.....C1

### Programming

The following programming example is a guideline. Before deploying, careful testing must be done by each user to determine if all functions of their program are functioning properly.

```
* .....1 .....Table 1 Programs
01: .....1 .....Sec. Execution Interval
```

#### Section 1.0

Measure CR10 Battery Voltage

```
01: .....P .....10 .....Battery Voltage
01 .....10 .....Loc[:BatryVolt]
```

#### Section 2.0

Measure 501. Result is MEDs/Hour

Multiplier will equal 1 MED Hr-1 / xxx mV. Consult the 501 documentation for the xxx millivolt calibration value. A typical value is 0.003. In this case the multiplier would equal (1 MED Hr-1 / 300mV) or 0.00333.

The offset will equal the dark value multiplied by -1. The dark value is measured with the correct multiplier and a preliminary offset of zero.

```
02: .....P .....2 .....Volt(DIFF)
01: .....1 .....Rep
02: .....25 .....2500mV 60 Hz rejection
.....Range
03: .....2 .....IN Chan
04: .....1 .....Loc[:MED / Hr]
05: .....Mult User entered value
06: .....Offset User entered value
```

#### Section 3.0

Control thermostat for day on / night off operation.

This option may be used if Campbell Scientific has added a 12V control circuit to your cable. Control is based on the UV measurement, assuming that it will be a minimum value at night. If the measurement is greater than or equal to 0.01, then daylight is presumed and the power is either switched on or left on. If the measurement is less than 0.01, darkness is presumed and the power is switched off.

```
03: .....P .....2 .....Volt(DIFF)
01: .....1 .....X Loc MED / Hr
02: .....3 .....>=
03: .....0.01 .....F
04: .....30 .....Then Do

04: .....P .....86 .....Do
01: .....41 .....Set high Port 1

05: .....P .....94 .....Else

06: .....P .....86 .....Do
01: .....51 .....Set low port 1

07: .....P .....95 .....End
```

#### Section 4.0

Measure 501 Temperature Sensor

```
08: .....P .....2 .....Volt(DIFF)
01: .....1 .....Rep
02: .....25 .....2500 mV 60 Hz rejection
.....Range
03: .....3 .....IN Chan
04: .....2 .....Loc [:501_Temp]
05: .....0.05 .....Mult
06: .....-25 .....Offset
```

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