

Interfacing YieldPoint's d4MUX with a Campbell Scientific CR6



December 2020

YieldPoint's d⁴MUX

The d⁴MUX and d⁸MUX is a low-cost solution for multiplexing an array or cluster of instruments (4 or 8) to a telemetry device such as a radio or Gateway. This allows up to 160 channels of data to be samples (20Channels/instrument)

Power: 6-38VDC

Red: +6-38VDC

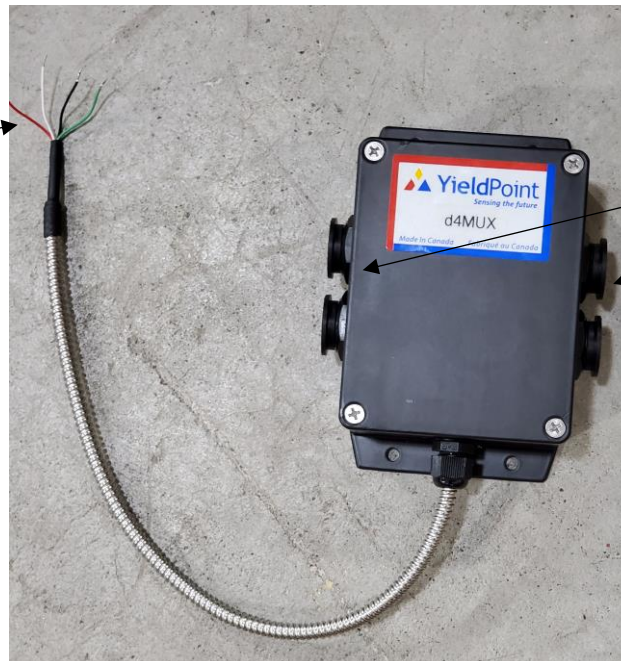
Black: GND

RS232:

White: Tx

Green: Rx

RS232 Settings: 9600,8,N,1



4 ports
for 4 YieldPoint instruments

RS485: 9600, 8, N, 1

dMUX Instruction Set

Only 3 instructions

:V <CR><LF> Gets the Version number

:Q <CR><LF> Self Test

Returns version + Polls all 8 ports.

Note for a d⁴MUX the Self test will only Return 4 ports (the other will return X and will Fail overall).

:I01 <CR><LF> Polls Port1. powers up and reads.
Times out with Y after 15secs

Note: the d4MUX can be connects to a using a smart cable:
<https://www.digikey.ca/en/products/detail/ftdi-future-technology-devices-international-ltd/TTL-232RG-VIP-WE/2441358>

Teraterm session

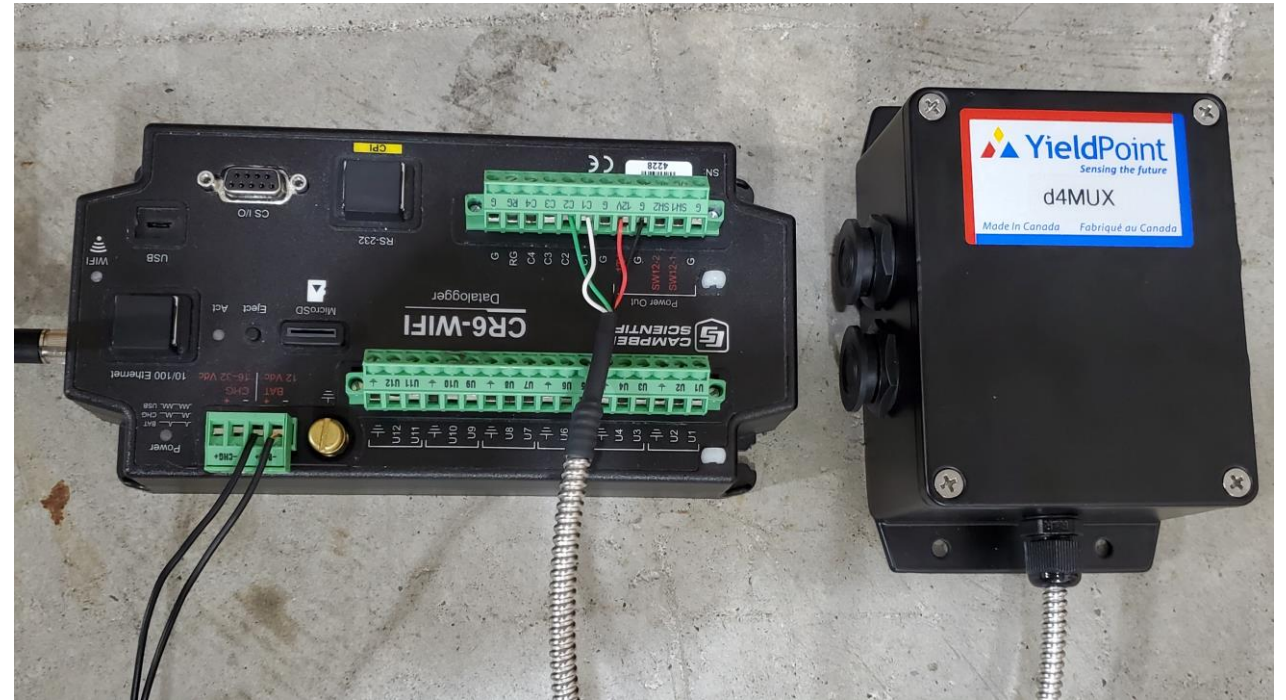
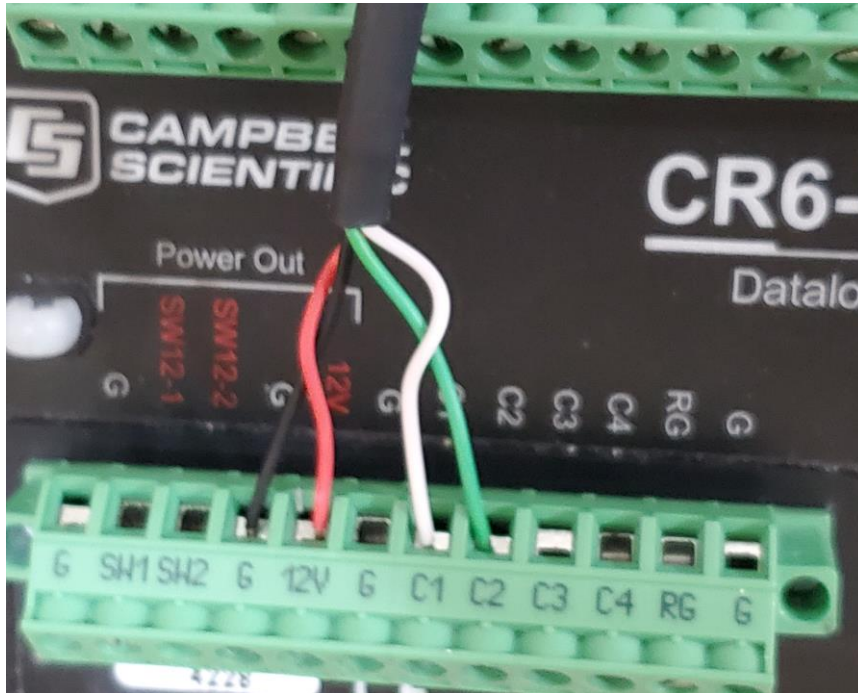
```
YP 8 INSTRUMENT GATEWAY Power Up
:V <CR><LF> 'No Echo
2.0
:Q <CR><LF> 'No Echo
Yieldpoint Inc. (c) 2001-2018
2.0
Test(8) Port1 :YP,160612009,d1TEMP,12,+ 20.5,C,
-PASS
Test(9) Port2 :YP,160612010,d1TEMP,12,+ 20.5,C,
-PASS
Test(10) Port3 :YP,160612011,d1TEMP,12,+ 20.9,C,
-PASS
Test(11) Port4 :YP,160612012,d1TEMP,12,+ 20.8,C,
-PASS
Test(12) Port5 :YP,X
-FAIL
Test(13) Port6 :YP,X
-FAIL
Test(14) Port7 :YP,X
-FAIL
Test(15) Port8 :YP,X
-FAIL
Yieldpoint Inc. (c) 2001-2018
2.0
: FAIL **
** not all 8 ports returned positive status **
```

Campbell Scientific CR6

In this document we will outline the process based on a Campbell Scientific CR6 datalogger using the C1/C2 inputs.



Physical Connection



Red:	12V
Black:	GND
White:	C1 (+/- 5V)
Green:	C2 (+/- 5V)

YP_d4MUX.CR6

Download the program YP_d4MUX.CR6 from:

www.yieldpoint.com/uploads/software/YP_d4MUX.CR6



Using the CRBasic editor in LoggerNet
open the YP_d4MUX program

```
CRBasic Editor - [YP_d4MUX.CR6 for the CR6]
File Edit View Search Compile Template Instruction Goto Window Tools Help
1 'CR6 Datalogger
2
3 'The datalogger type listed on line 1 determines the default instruction set,
4 'compiler, and help files used for a program that uses the .DLD or .CRB program
5 'extension. These options can also be set using the Set Datalogger Type dialog box
6 '(CRBasic Editor|Tools|Set Datalogger Type).
7
8 'YP_d4MUX
9 'Date: Dec 6th 2020
10 'Program author: A.J.Hyett
11 ' YieldPoint Inc 2020
12
13 'Declare Public Variables
14
15 Public PTemp, Batt_volt
16 Public CommandString As String * 10
17 Public Version As String * 5
18 Public Port_1 As String * 200
19 Public Port_2 As String * 200
20 Public Port_3 As String * 200
21 Public Port_4 As String * 200
22 Public Port_String As String *200
23 |
24 Public Sensor_ID As String * 12
25 Public Sensor_Desc As String * 20
26 Public Sensor_Type As Long
```

Note: The Program may require
modification other types of Campbell
logger

Structure of YP_d4MUX.CR6

YP_d4MUX consists of three main parts:

1. *Definitions and Data Tables*: Up to 20 channels of data for each port
2. *Port_Parse*: A subroutine to parse the information in a YP string into individual variables.
3. *Main_Program*: the main control of the program that check the version and polls the individual ports of the d4MUX as an interval specified by the Scan function.

