

YieldPoint's d-Tech → LS-6G DIG

Functionality:

Implementation of Worldsensing LS-6G DIG
Node and YP's RS485 d-Tech instruments.



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The YieldPoint Product Map: Implemented and tested

PRODUCT	SENSOR TYPE	NUM CHANNELS	MEASURAND	Units
dUMP or GMM	11	1	d	mm
TEMP-1W	13	1	T	C
d-GMM/dUMP	21	2	T,d	C,mm
d-micro	23	2	T,u	C,um
dPiezo, dPress	28	2	T,p	C,kPa
BluVibe(VW)	29	2	T, f	C,Hz
d2MPBX/d3EXTO	31	3	T,d,d	C,mm,mm
d3MPBX/d3EXTO	41	4	T,d,d,d	C,mm,mm,mm
d3CABLE	41	4	T,d,d,d	C,mm,mm,mm
d4MPBX/d4EXTO	51	5	T,d,d,d,d	C,mm,mm,mm,mm
d4CABLE	51	5	T,d,d,d,d,	C,mm,mm,mm,mm
d5MPBX/d5EXTO	61	6	T,d,d,d,d,d	C,mm,mm,mm,mm,mm
d5CABLE	61	6	T,d,d,d,d,d	C,mm,mm,mm,mm,mm
d6MPBX/d6EXTO	71	7	T,d,d,d,d,d,d	C,mm,mm,mm,mm,mm,mm
d6REBAR	75	7	T,u,u,u,u,u,u	C,um,um,um,um,um,um
d6BOLT	75	7	T,u,u,u,u,u,u	C,um,um,um,um,um,um
d6CABLE	71	7	T,d,d,d,d,d,d	C,mm,mm,mm,mm,mm,mm
dADICT(MDT)	89	8	T,dig,dig,dig,dig,dig,dig,A	C,bit,bit,bit,bit,bit,bit,microA
TEMP 10-1W	106	10	TTTTTTTTTT	C x 10

The YieldPoint Unique Instrument ID

Each YP instrument is assigned a unique ID number during manufacturing.

22	07	13	9	066
Year	Month	# of channels 1xTemp. 12xStrain	Sensor type	Device serial #
2-digit	2-digit	2- digit	1-digit	3-digit

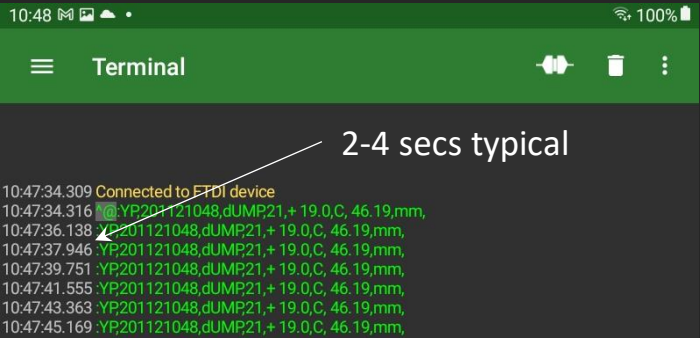
```
main.c
1 /*
2  * YieldPoint HID Cell Converter
3  *
4  * Enter ID in the YP_ID field and recompile
5  *
6  */
7
8 #include <stdio.h>
9 #include <stdlib.h>
10 #include <string.h>
11 #include <SI_EFM8BB2_Register_Enums.h>
12
13
14 #define YP_ID "2207139066"
15
16
17 #define SYSCLK 24500000 //System clock frequency in Hz
18
19 void SiLabs_Startup(void)
20 {
21     // Disable the watchdog here
22 }
23
24 void init(void)
25 {
26     uint8_t TCON_save;
27     uint8_t TMR3CN0_TR3_save;
```


Wiring: Hook-up YP instrument to the LS-G6-DIG node

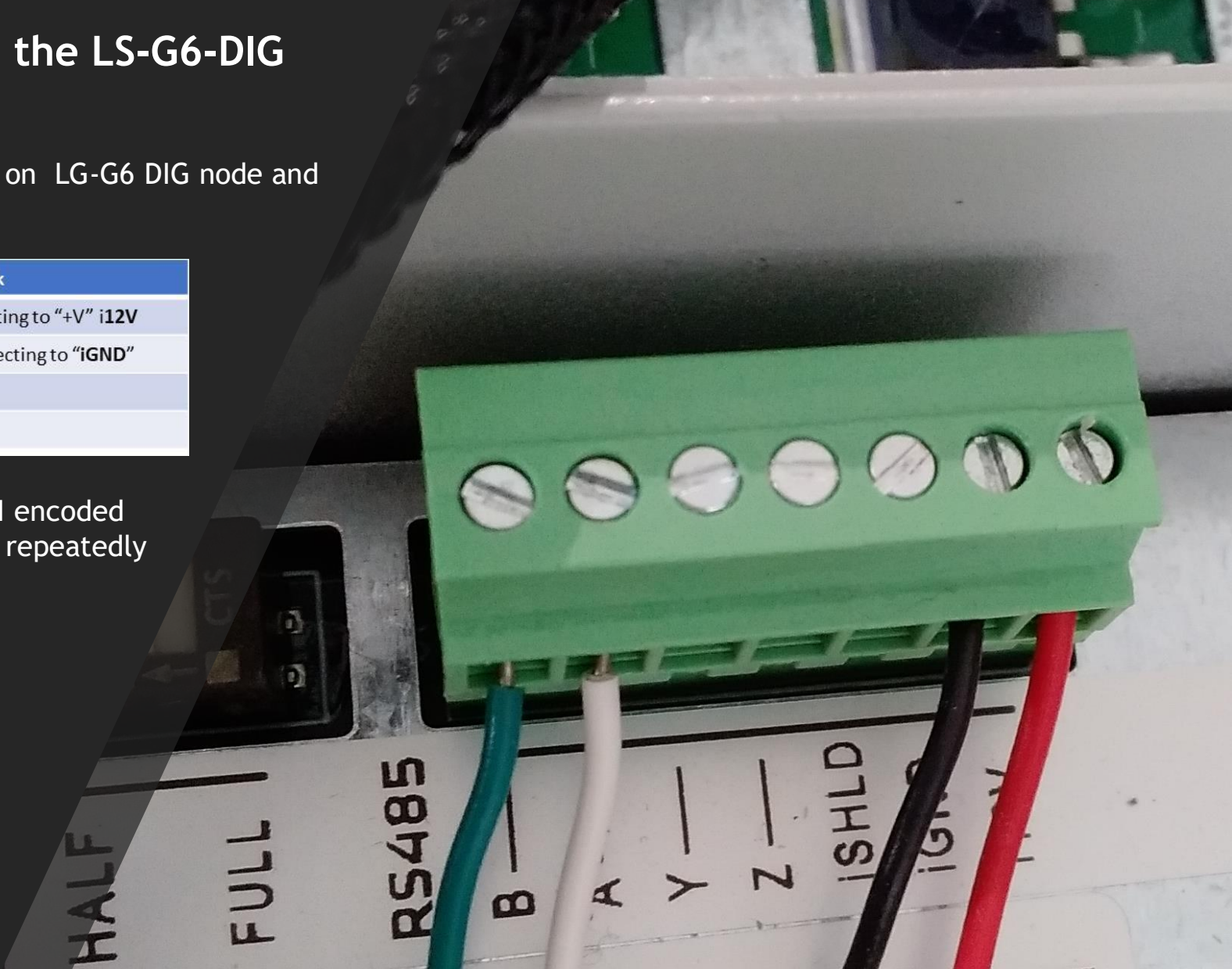
Pass the d-HID RS485 wire through the gland in the on LG-G6 DIG node and connect to the RS485 port of the LS-6G-DIG.

RS485 leadwire	WS Node terminal Block
Red wire	Exposed section of the red wire connecting to "+V" i12V
Black wire	Exposed section of the black wire connecting to "IGND"
White Wire	A
Green wire	B

The serial RS485 signal is 9600,8,N,1 and is an ASII encoded string. The signal takes around 3secs to scroll and repeatedly scrolls while power is applied.



Results from Terminal App on tablet with RS485->USB cable



Electrical Specifications

Power: 5-16VDC

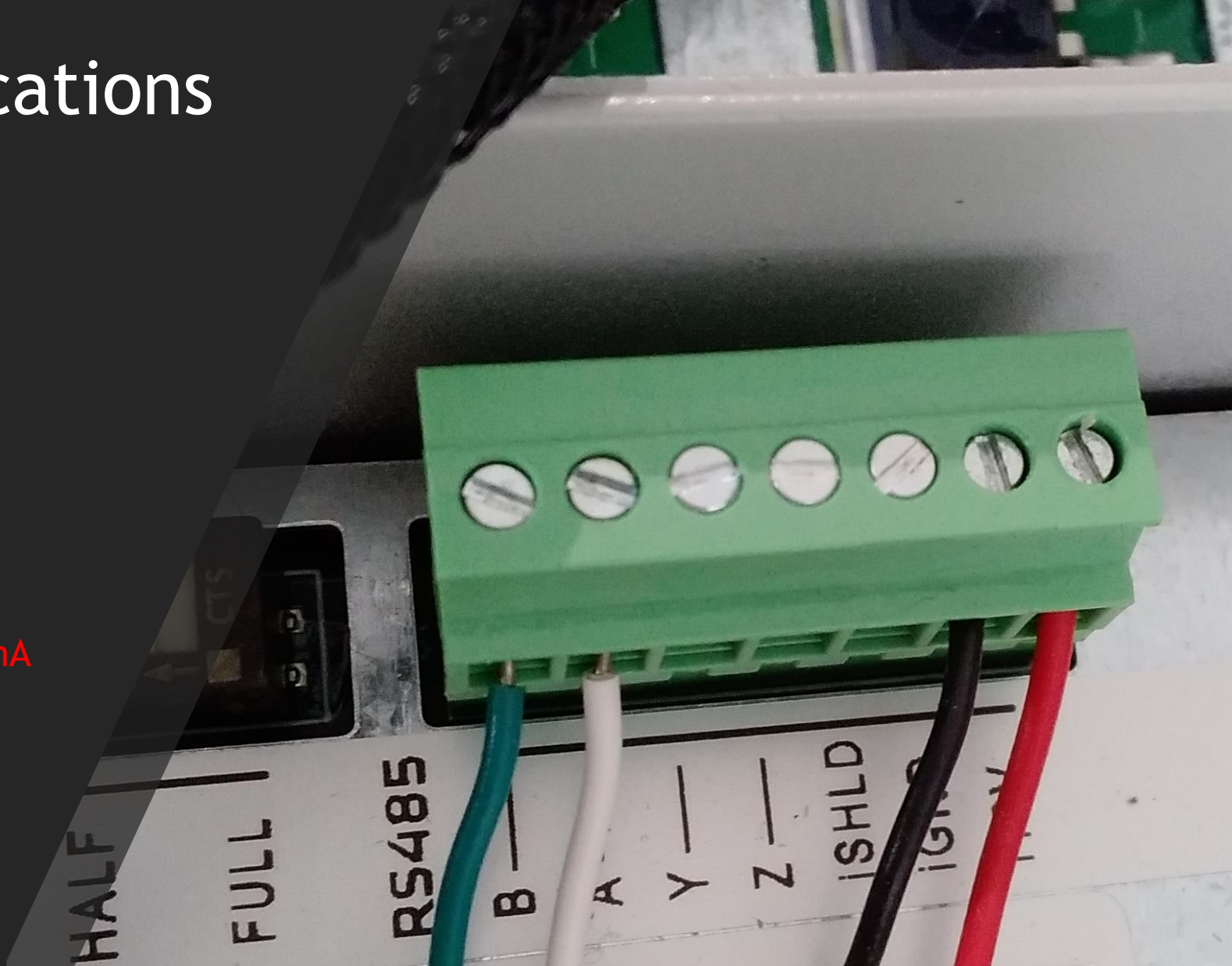
Current: <15mA for YP instrument

Duration: <5secs / reading

RS485: 9600,8,N,1

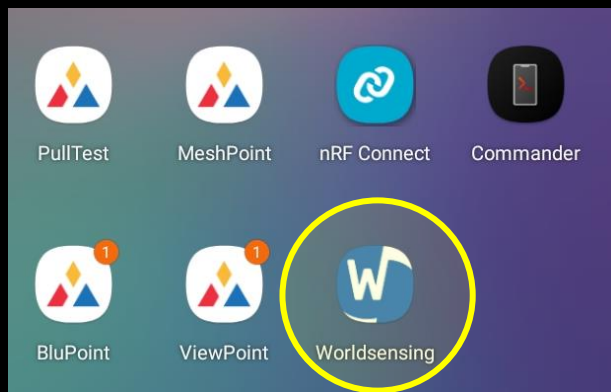
Temp: -40C85C

Typically YP instruments draw < 15mA
(dEXT0, dCABLE, dREBAR).

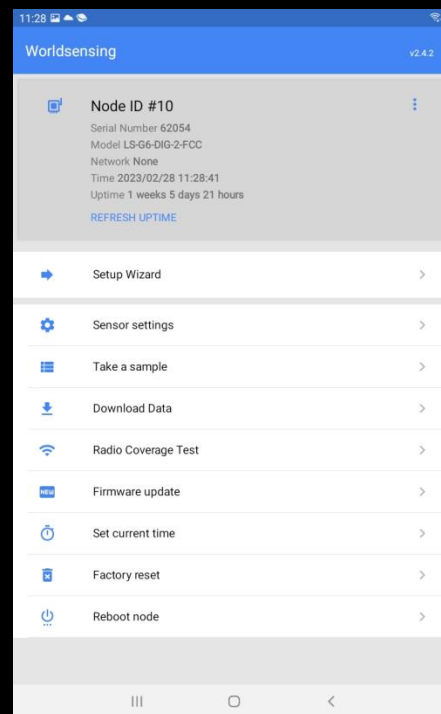


Take a Reading with LS-G6-DIG

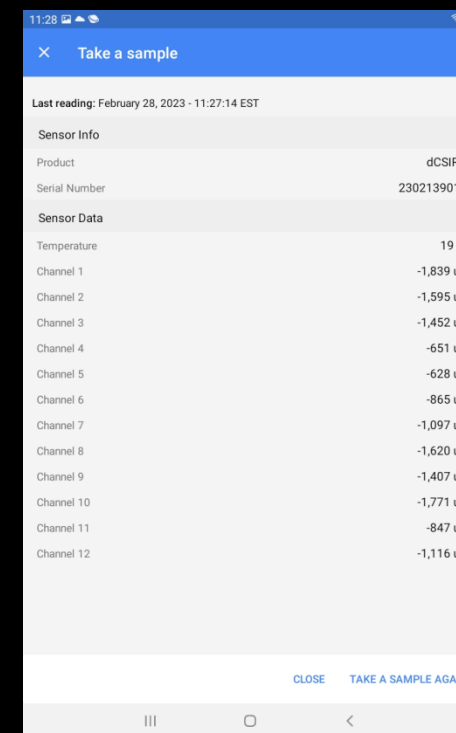
Step 1: Install and Open the Worldsensing App



Step 2: To test take a sample



The Reading:



Take a Reading with LS-G6-DIG - Examples

d-UMP
Utility Monitoring Point

10:16 88%

Take a sample

Last reading: March 8, 2023 - 10:15:14 EST

Sensor Info	
Product	d-GMM/dUMP
Serial Number	201121048
Sensor Data	
Temperature	18.8 °C
Channel 1	46.2 mm

CLOSE TAKE A SAMPLE AGAIN

d-EXTO
4 Point Civil MPBX

10:05 90%

Take a sample

Last reading: March 8, 2023 - 10:05:18 EST

Sensor Info	
Product	d4
Serial Number	211251072
Sensor Data	
Temperature	18.5 °C
Channel 1	48.46 mm
Channel 2	48.35 mm
Channel 3	48.97 mm
Channel 4	52.74 mm

CLOSE TAKE A SAMPLE AGAIN

d-HID:
Hollow inclusion stress cell

11:28

Take a sample

Last reading: February 28, 2023 - 11:27:14 EST

Sensor Info	
Product	dCSIRO
Serial Number	2302139016
Sensor Data	
Temperature	19 °C
Channel 1	-1,839 uE
Channel 2	-1,595 uE
Channel 3	-1,452 uE
Channel 4	-651 uE
Channel 5	-628 uE
Channel 6	-865 uE
Channel 7	-1,097 uE
Channel 8	-1,620 uE
Channel 9	-1,407 uE
Channel 10	-1,771 uE
Channel 11	-847 uE
Channel 12	-1,116 uE

CLOSE TAKE A SAMPLE AGAIN