LIS3MDL Magnetometer

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by

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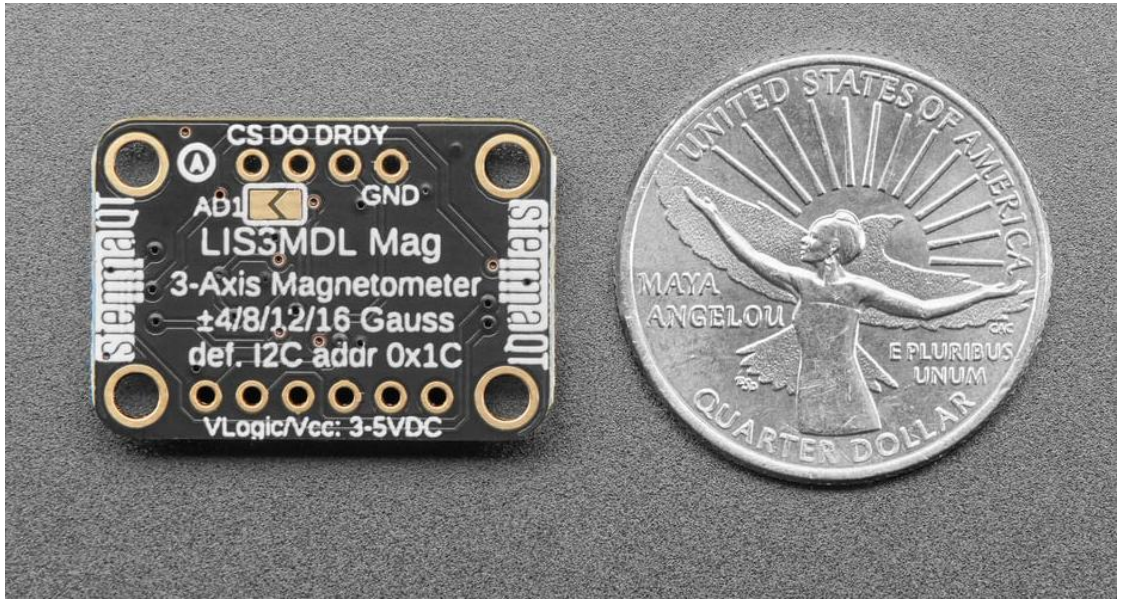
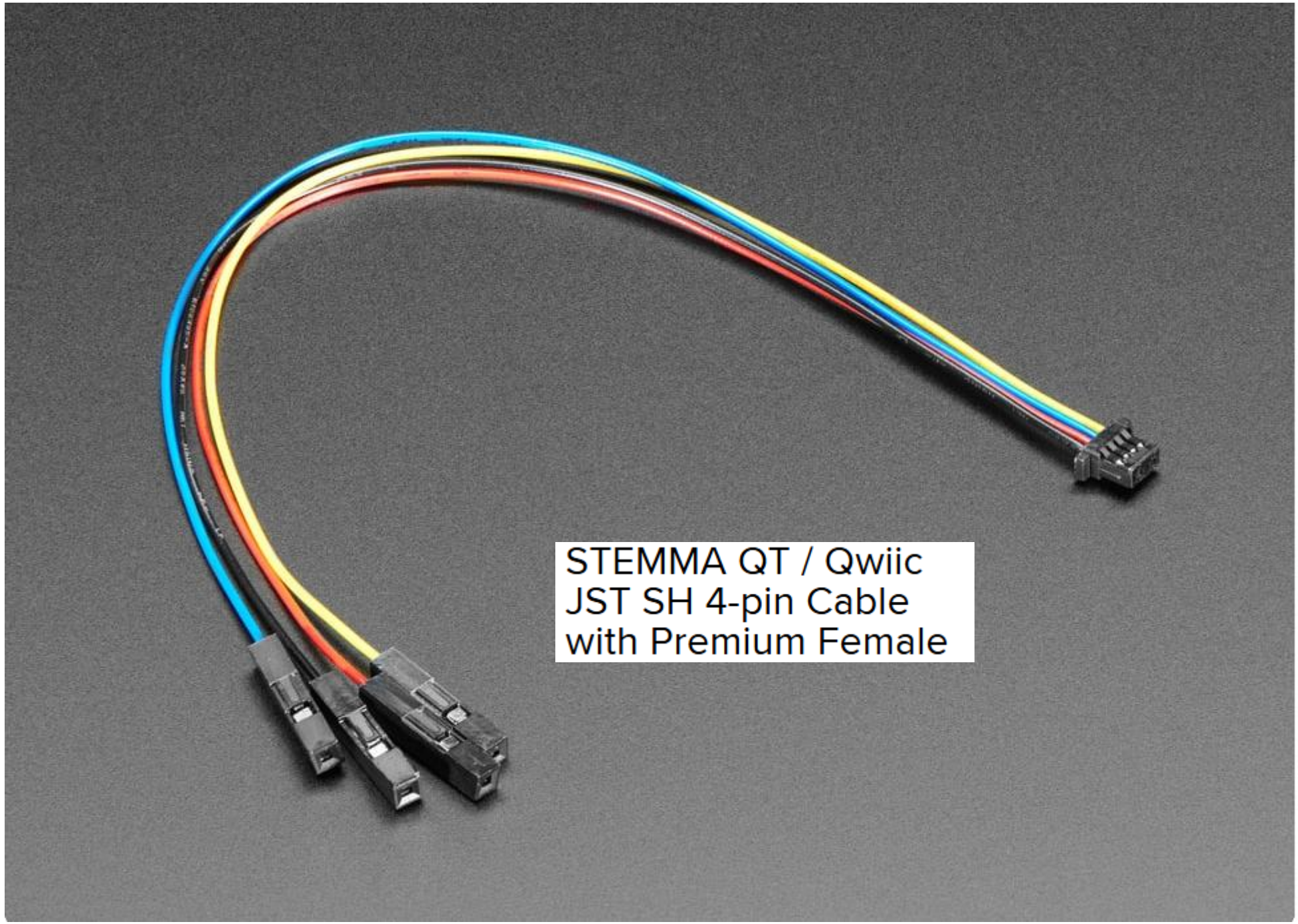
Digital output magnetic sensor: ultralow-power, high-performance 3-axis magnetometer

LGA-12L
(2.0 x 2.0 x 1.0 mm)

Features

- Wide supply voltage, 1.9 V to 3.6 V
- Independent IO supply (1.8 V)
- ±4/±8/±12/±16 gauss selectable magnetic full scales
- Continuous and single-conversion modes
- 16-bit data output
- Interrupt generator
- Self-test
- I²C/SPI digital output interface
- Power-down mode / low-power mode
- ECOPACK and RoHS compliant




STEMMA QT / Qwiic
JST SH 4-pin Cable
with Premium Female

Raspberry Pi Zero 2 W

- 1GHz quad-core 64-bit Arm Cortex-A53 CPU
- 512MB SDRAM
- 2.4GHz 802.11 b/g/n wireless LAN
- Bluetooth 4.2, Bluetooth Low Energy (BLE), onboard antenna
- Mini HDMI® port and micro USB On-The-Go (OTG) port
- microSD card slot
- CSI-2 camera connector
- HAT-compatible 40-pin header footprint (unpopulated)
- H.264, MPEG-4 decode (1080p30); H.264 encode (1080p30)
- OpenGL ES 1.1, 2.0 graphics
- Micro USB power
- Composite video and reset pins via solder test points
- 65mm x 30mm

Specification

Output

Output voltage:	+5.1V DC
Minimum load current:	0.0A
Nominal load current:	2.5A
Maximum power:	12.5W
Load regulation:	±5%
Line regulation:	±2%
Ripple & noise:	120mVp-p
Rise time:	100ms maximum to regulation limits for DC outputs
Turn-on delay:	3000ms maximum at nominal input AC voltage and full load
Protection:	Short circuit protection Overcurrent protection
Efficiency:	80.73% minimum (output current from 100%, 75%, 50%, 25%)
Output cable:	1.5m 18AWG
Output connector:	micro USB

Input

Voltage range:	100–240Vac (rated) 96–264Vac (operating)
Frequency:	50/60Hz ±3Hz
Current:	0.5A maximum
Power consumption (no load):	0.075W maximum
Inrush current:	No damage shall occur and the input fuse shall not blow

Conclusion

- Will need to purchase the power supply so that we can use the unit remote without having to be around the environment. The setup will need to be verified again as stated when collecting the magnetic field data. Example of the readout right.

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Adafruit LIS3MDL test!
LIS3MDL Found!
Performance mode set to: Medium
Operation mode set to: Continuous
Data rate set to: 155 Hz
Range set to: +-4 gauss

X:  1201        Y:  -15467      Z:  3802
        X: 17.55        Y: -226.06      Z: 55.57 uTesla


X:  1444        Y:  -14684      Z:  3581
        X: 21.10        Y: -214.62      Z: 52.34 uTesla


X:  1172        Y:  -14696      Z:  3651
        X: 16.62        Y: -214.44      Z: 53.93 uTesla
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