



## Product Description

The *Bar30* pressure sensor is a high-pressure, high-resolution pressure sensor that is sealed from the water and ready to install in a [watertight enclosure](#) on your ROV or AUV. With 0.2 mbar resolution, it has an amazing depth measurement resolution of 2mm in the water column!

The sensor is the Measurement Specialties MS5837-30BA, which can measure up to 30 bar (300m/1000ft depth) and communicates over I<sup>2</sup>C. It operates on 3.3V I<sup>2</sup>C voltage but can accept power input up to 5.5V. It comes standard with a 4-pin DF13 connector that is compatible with most [DroneCode](#) compatible boards including the APM2.6, PixHawk, and others.

This sensor includes a temperature sensor accurate to  $\pm 1^{\circ}\text{C}$ , with data also accessible through I<sup>2</sup>C. If you need something with more temperature accuracy, please check out the [Celsius Temperature Sensor](#).

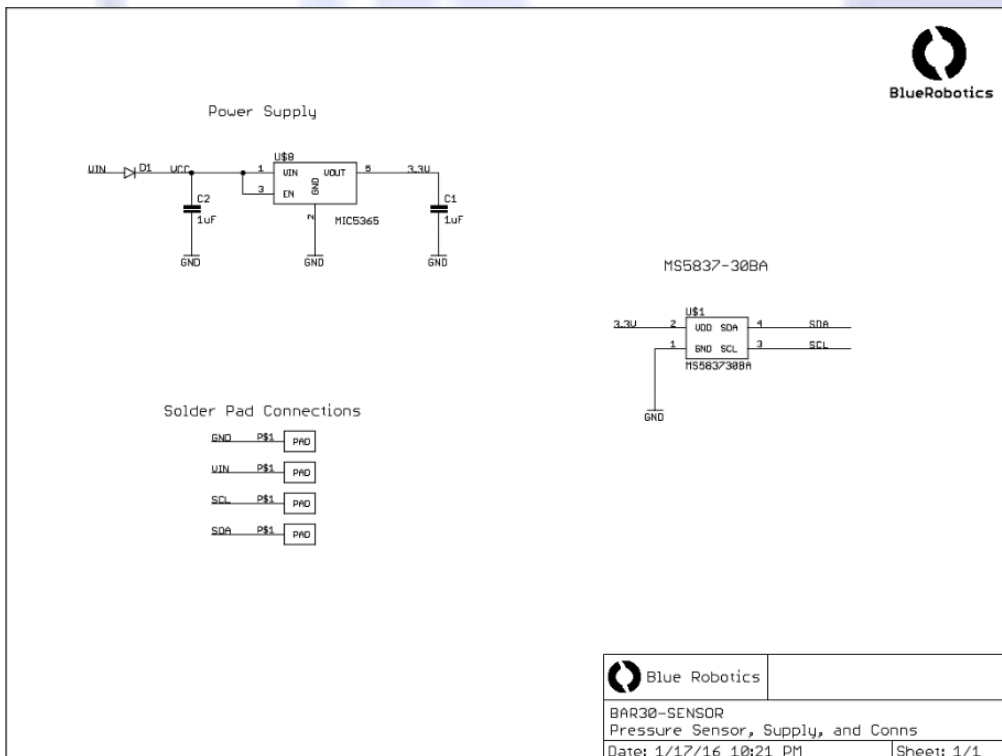
The anodized aluminum body was designed around the cable penetrator design and is compatible with all of the [watertight enclosures](#).

The electrical schematic and board layout are open-source and the design files are available below. Feel free to adapt for your own needs.

## Contents

- 1 x *Bar30* Pressure Sensor
- 1 x O-ring
- 1 x Nut

## Specifications:





For further information please see the [MS5837-30BA Data Sheet](#).

## Electrical

Item	Condition	Value
Supply Voltage	–	2.5-5.5 volts
I <sup>2</sup> C Logic Voltage (SDA and SCL)	–	2.5 - 3.6 volts
Peak Current	–	1.25 mA

## Pressure

Item	Condition	Value
Maximum Mechanical Pressure	–	50 bar
Operating Pressure	–	0-30 bar [up to 1000 ft (300 m) in water]
Absolute Accuracy (0-40°C)	From 0-6 bar	+/- 50 mbar (51 cm in freshwater)
	From 0-20 bar	+/- 100 mbar (102 cm in freshwater)
	From 0-30 bar	+/- 200 mbar (204 cm in freshwater)
Absolute Accuracy (-25-85°C)	From 0-6 bar	+/- 100 mbar (102 cm in freshwater)
	From 0-20 bar	+/- 200 mbar (204 cm in freshwater)
	From 0-30 bar	+/- 400 mbar (408 cm in freshwater)

## Temperature

Item	Condition	Value
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## Electrical

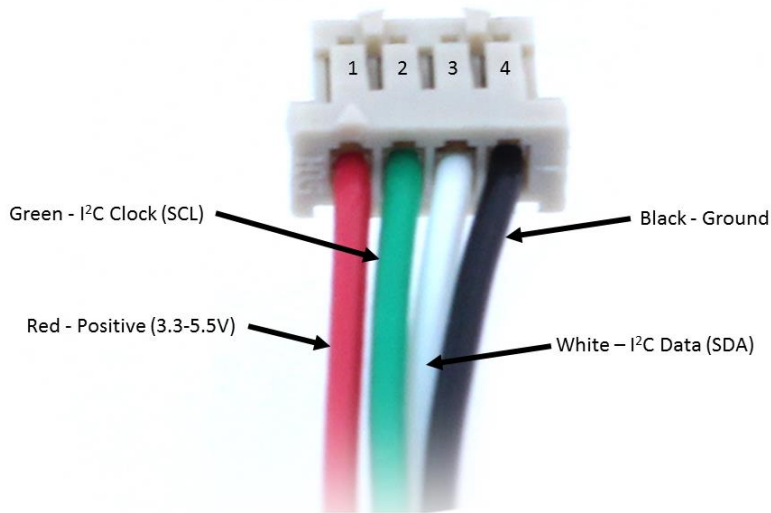
Operating Temperature	–	-20 to +85°C
Storage Temperature	–	-40 to +85°C
Absolute Accuracy	From 0-10 bar at 0-60°C	+/- 1.5°C
	From 0-30 bar at -20-85°C	+/- 4.0°C

## Physical

Wire Colors	Green - I <sup>2</sup> C Clock (SCL, 3.3V)
	White - I <sup>2</sup> C Data (SDA, 3.3V)
	Red - Positive (2.5-5.5V)
	Black - Ground
Overall Length	37 mm
Thread Size	M10x1.5 20 mm threaded
Recommended Through Hole Size	10-11 mm
Wrench Flats	16 mm

## DF13 Pinout

1 Δ	Red - Positive (3.3-5.5V)
2	Green - I <sup>2</sup> C Clock (SCL)
3	White - I <sup>2</sup> C Data (SDA)
4	Black - Ground



Mating Connector: [Hirose 4-pos DF13 on Digi-Key](#)

## 2D Drawing

