

# Benthos PSA-916

Programmable  
Sonar Altimeter

## Sensor Interface Manual



# Table of Contents

<b>Overview .....</b>	<b>1</b>
<b>Installation .....</b>	<b>2</b>
<b>Connecting to an iSIC Data Logger .....</b>	<b>2</b>
<b>Computer Interface .....</b>	<b>4</b>

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## Overview

The Benthos PSA-916 Deep Programmable Sonar Altimeter is a lightweight altimeter that can be used in freshwater, brackish, or saltwater applications.

The instrument functions by determining the round trip time for a sound pulse to travel from the transducer head through the water, reflecting off a surface and returning to the sensor head. A wide 14° beam pattern ensures reliability in the field and range measurement accuracy.



**Figure 1:** Benthos PSA-916 programmable sonar altimeter

## Installation

The PSA-916 altimeter should be mounted such that there are no obstructions between the altimeter and the target surface. Additionally, care should be taken to ensure that the anodized finish on the instrument is not scratched or gouged by any mechanical mounting mechanisms.

Observe additional precautions outlined in the “Deployment” section of the manufacturer’s documentation.

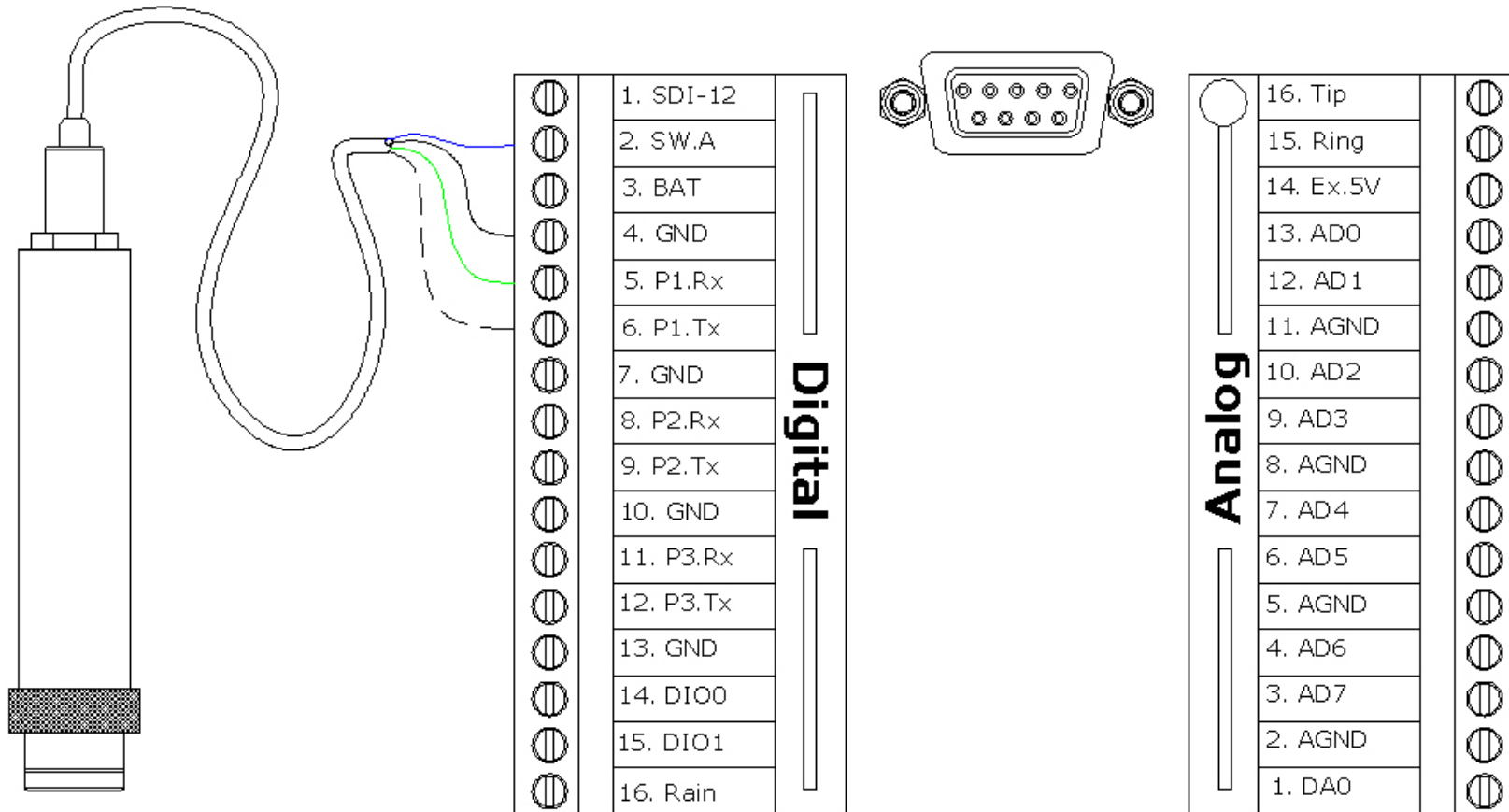
## Connecting to an iSIC Data Logger

To wire the sensor into the iSIC, route the cable and wires through a gland fitting installed in the enclosure, and then unplug the green terminal strip from the data logger before securing individual wires according to the wiring diagram below. Avoid clamping on wire insulation.



**Figure 2:** Unplug the green terminal strip from the data logger before wiring the sensor

**Note:** Dashed line indicates white wire



**Figure 3:** Physical wiring of Benthos PSA-916 altimeter to an iSIC data logger

**Table 1:** Table for wiring a Benthos PSA-916 altimeter to an iSIC data logger

<b>Digital</b>		<b>Analog</b>	
<b>1. SDI-12</b>	-	<b>16. Tip</b>	-
<b>2. SW.A</b>	Blue (PWR)	<b>15. Ring</b>	-
<b>3. BAT</b>	-	<b>14. Ex.5V</b>	-
<b>4. GND</b>	Black (GND)	<b>13. AD0</b>	-
<b>5. P1.Rx</b>	Green (RS-232 Tx)	<b>12. AD1</b>	-
<b>6. P1.Tx</b>	White (RS-232 Rx)	<b>11. AGND</b>	-
<b>7. GND</b>	-	<b>10. AD2</b>	-
<b>8. P2.Rx</b>	-	<b>9. AD3</b>	-
<b>9. P2.Tx</b>	-	<b>8. AGND</b>	-
<b>10. GND</b>	-	<b>7. AD4</b>	-
<b>11. P3.Rx</b>	-	<b>6. AD5</b>	-
<b>12. P3.Tx</b>	-	<b>5. AGND</b>	-
<b>13. GND</b>	-	<b>4. AD6</b>	-
<b>14. DIO0</b>	-	<b>3. AD7</b>	-
<b>15. DIO1</b>	-	<b>2. AGND</b>	-
<b>16. Rain</b>	-	<b>1. DA0</b>	-

**Notes:**

- The PSA-916 should be wired with switch power because it draws a significant amount of current while running idle.
- P2. Rx and P2.Tx must be used in place of P1.Rx and P1.Tx when wiring two sensors to the iSIC terminal strip

## Computer Interface

iChart software is used to set up the iSIC data logger, as well as to acquire and process data. Launch the software and select **File | New Project**. Follow the Setup Device Wizard to create a project file. Additional information is available in the iChart manual.



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