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## **BW14a Pitot Sensor Board**

V2

Date : 16/10/06

Software Version : BW14a\_4

PCB Version : BW14a

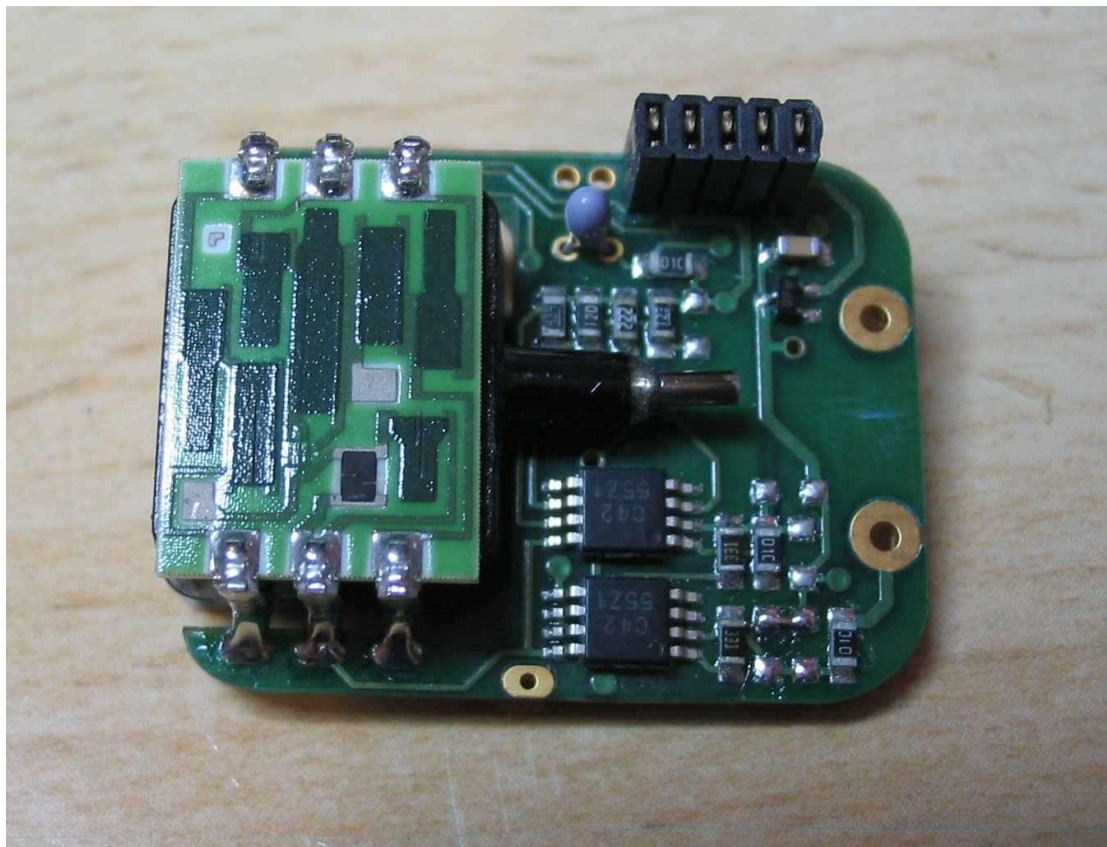
### **Sensors supplied as follows:**

**ID low byte set.**

**Pressure threshold is set to 50 Pa.**

**Normal mode.**

**Sample rate is set to 64Hz - Tx interval 1 second**



ENSURE THE SENSOR IS CONNECTED CORRECTLY - SEE BELOW WIRING DIAGRAM.

(note : +V supply is the pad nearest the vertical header).

Positive pressure applied to the above pressure port will give a positive pressure reading.



## Tare Facility

A Tare function has been included in firmware version BW14\_4.

This function allows small amounts of sensor/amplifier offsets to be zeroed out with the sensor in ambient air pressure. A Tare value is saved to eeprom and either subtracted or added to the subsequent pressure readings.

*If the sensor is re-programmed after the Tare operation, the sensors eeprom should be read first into the programmers memory before re-programming. This will then ensure the Tare value will be retained. Alternatively, the Tare operation can be carried out after re-programming.*

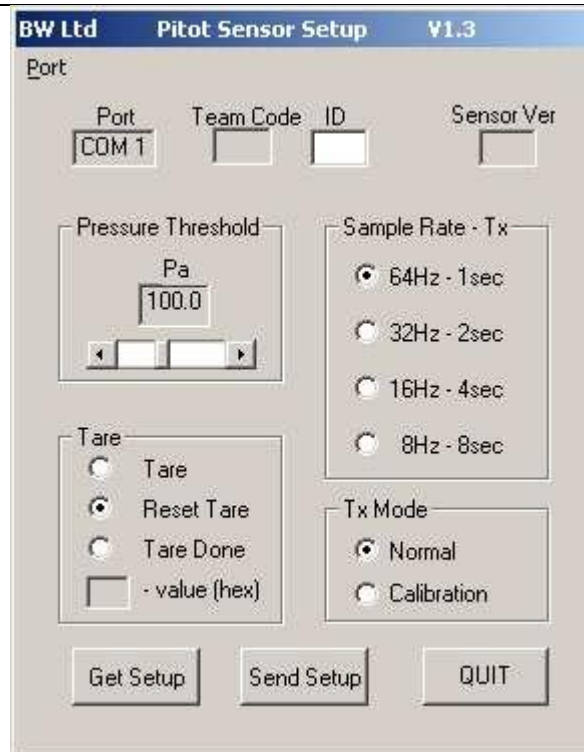
- 1 Check firmware BW14\_4.hex is installed in the sensor (see Firmware Update.doc)
- 2 To initiate the Tare function, select 'Tare' and send this to the sensor, using the PC utility.
- 3 Before connecting power, briefly short the power pins on the sensor to ensure a clean reset.

Also, ensure that both pressure ports are open to ambient air pressure and that the sensor is not touched, as this may introduce offsets into the amplifiers.

Also make sure the programming lead is disconnected from the sensor header - only the battery can be connected during 'Tare' (also during normal sensor operation).

- 4 Connect a standard 3.6V battery to the sensor.
- 5 The Tare function will now take place - for about 2 secs.
- 6 Check the Tare status using the PC utility (see below). 'Tare Done' will be selected with the Tare value indicated (in the range 00 to 1F).
- 7 The sensor should now transmit very close to zero Pa in ambient air pressure. (this can be checked by setting the sensor temporarily to calibration mode, to transmit at all times).
- 8 To reset the Tare, select 'Reset Tare' and send this to the sensor. The sensor will now transmit pressure **with** any offsets.
- 9 To initiate the Tare function again, select 'Tare' and send this to the sensor. Repeat #2 to #6 (above).
- 10 Set the ID etc using the utility in the normal way.

## Tyre Monitoring System TMS



The screenshot shows a software window titled "BW Ltd Pitot Sensor Setup V1.3". It contains several configuration fields and buttons:

- Port:** A dropdown menu showing "COM 1".
- Team Code:** An empty text input field.
- ID:** An empty text input field.
- Sensor Ver:** An empty text input field.
- Pressure Threshold:** A numeric input field showing "100.0" with a unit of "Pa" above it. Below the field are left and right arrow buttons.
- Sample Rate - Tx:** A group box containing four radio button options:
  - 64Hz - 1sec
  - 32Hz - 2sec
  - 16Hz - 4sec
  - 8Hz - 8sec
- Tare:** A group box containing four radio button options:
  - Tare
  - Reset Tare
  - Tare Done
  - value (hex)
- Tx Mode:** A group box containing two radio button options:
  - Normal
  - Calibration

At the bottom of the window are three buttons: "Get Setup", "Send Setup", and "QUIT".

### Wiring Diagram

NOTE : DAMAGE MAY OCCUR IF THE BATTERY IS WIRED INCORRECTLY

Tyre Monitoring System TMS

