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Volume 7 - Summer 2014

This Issue of Windwords

Welcome to the Summer 2014 issue of '**Windwords**'. In this issue you will find the following topics...

Photo Contest - More news and information about our latest Photo Contest.

New Articles of Interest - New and Noteworthy articles related to Sonic Technology

For The Record - Results of our in-house Temperature Comparison Test.

Just The Facts - More facts about ATI Sonics that you might not be aware of.

For the Fun of it - HA HA HA HA HA HA...!

For those of you who have just received your first copy of Windwords - we invite you to take a look at some previous issues. The Windwords Archive can be found on our website: <http://apptech.com/windwords>

Photo Contest!



**Payton Manning -The Denver Broncos
 Quarterback says: "HURRY HURRY".**

Even though the Broncos didn't win the Superbowl, you can still win BIG!!! Take his advice, start snapping photos and get them to us for your chance to win a free upgrade of one of your sonics to our latest software. The contest will be ending in September... so there is still time...!

Just The Facts



For those working in cold conditions?

Do you need to operate your sonic in cold conditions? The ATI sonic will operate just fine down to -50°C without the need for any heating. If you need to operate the sonic in icing conditions, heaters can be added to keep it ice free, but they are not needed to make it operate.

For operation in a cold environment, Teflon cables are also available.

Email your photos to: photocontest@apptech.com.

Please provide us with a description of the photo plus your name, organization, email, and phone number so that we can let you know if you win. As before, none of the information you provide will be shared in any way. All photos submitted become the property of Applied Technologies, Inc. Please limit the number of photos to 5 for any single organization. Get out there and start snapping. Please send photos as JPG or PNG.

For The Record...



Sonic anemometer-thermometers began appearing in field studies over 50 years ago. Large amounts of sonic wind fluctuation data have been collected and intercomparison experiments have been conducted to verify and resolve issues with the wind measurements.

At the time, they also found that the thermometer data were disappointing. The temperature readings departed significantly from fast-response platinum fine-wire thermometers. Therefore, no serious efforts were made to check the accuracy of the temperature measurements. The sonic temperature data were ignored for some time.

This prompted us at ATI to study the problem and come up with ways to make the sonic temperatures more accurate. There is a paper that discusses the results of this work called "Sonic Thermometry Today". The paper is located on our website, on the Appnotes Page at the bottom of the table.

<http://www.apptech.com/application-notes.html>

New Articles of Interest



Understanding the Non-Orthogonal Sonic Anemometers

There is a new article written by Dr. J. C. Kaimal and Herb Zimmerman dealing with *Understanding the*

For those in need of an accurate temperature measurement?

One feature of the ATI sonic anemometer is the ability to provide a temperature output. The ATI sonic anemometer can be calibrated by the operator. When this is performed, a temperature and relative humidity value are required. These sensors, used for this purpose, can be as accurate as necessary for the required application. The more accurate you make these sensors, the more accurate the value of wind velocity output will be. A secondary benefit of this calibration, it will also make the temperature output more accurate. To improve the accuracy of the temperature measurement even more, the ATI sonic has another menu command that allows the operator to enter the value of the relative humidity in which the instrument is operating during the application. This makes the temperature even more accurate.

With this sonic temperature you not only have a very accurate temperature value, but you also have a very fast temperature measurement. The output of the ATI sonic can be set for anything from once per hour to 200Hz. This information is also available in the operator's manual.

For more info, check the "For The Record" in the other column.

For the Fun of it!



The following are actual statements found on insurance forms where drivers attempted to summarize the details of an accident in the fewest possible words.

- The guy was all over the road. I had to swerve a number of times before I hit him.
- I had been driving for 40 years when I fell asleep at the wheel and had an accident.
- The pedestrian had no idea which way to run, so I ran over him.

Non-Orthogonal Sonic Anemometers.

Some investigators, who have data collected from their sites, are finding that data from stations using non-orthogonal probes were underestimating both the vertical wind component and the heat flux by about 15%, compared to those using ATI's orthogonal "K" probes. Earlier comparison tests revealed differences of this magnitude, but it was assumed the orthogonal probes were the ones reading too high. Could the non-orthogonal configurations be responsible for underestimating the vertical wind?

The exhaustive tests and analyses reported by several groups of investigators make it clear that the non-orthogonal probes, for reasons unknown, were indeed underestimating the vertical wind.

This paper tries to provide one explanation to this difficulty. If you're interested in this problem, here is a link to the complete paper on our website, which can be downloaded in PDF format.

<http://www.apptech.com/application-notes.html>

The paper is located second from the bottom of the table.

Update From Our Last Windwords

In the last issue of Windwords, we mentioned that there was another comparison test being performed. The test has been completed, but no paper as yet, due to higher priorities. In the meantime, a poster was generated for the AGU 2013 Fall Meeting and was displayed at that meeting. If you are interested in some of the results from this test, which were put into the poster, you can see a copy of the poster on our website. Here is the link:

<http://www.apptech.com/meeting-posters.html>

We are expecting the paper to be available for our next issue of Windwords and we will present the information at that time.

Windwords Archive

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<http://www.apptech.com/windwords.html>

- To avoid hitting the bumper of the car in front, I hit the pedestrian.
- An invisible car came out of no where, struck my car, and vanished.
- I saw a slow moving; sad faced old man as he bounced off the roof of my car.
- I was on my way to the doctor with rear end trouble when my universal joint gave way causing me to have an accident.
- Coming home I drove into the wrong house and collided with a tree I don't have.
- In my attempt to kill a fly, I drove into a telephone pole.
- The indirect cause of the accident was a little guy in a small car with a big mouth.

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