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Major program to enhance
national weather observation network

China Meteorological Administration Invests in Accurate Vaisala Barometers

China Meteorological Administration, CMA, is implementing a project around China called "Atmosphere Automatic Monitoring System". The objective is to set up a nationwide monitoring network of weather observation stations, in three different categories, to form a network.

According to its 10th five-year plan (2000–2004), China Meteorological Administration (CMA) has started to implement a project called Atmosphere Automatic Monitoring System, which extends over the entire country. The project aims to set up three classes of weather observation station and a monitoring network. The top-level stations, which are called national standard stations, will be the main weather observation bases in the monitoring network. Totalling more than one hundred, these stations will be equipped with the hardware needed to improve accuracy and long-term stability. The second grade of station are called basic stations and will be set up around China to raise the weather observation ability and the density of observations. The third category of station, so-called general stations, will total more than 1000. The general stations will perform observations to further increase network den-



The China National Meteorological Center which was responsible for the test is located in Beijing.

sity and acquire more data. The automatic weather stations to be employed at these three classes of station will be manufactured in China. However, sub-assemblies and measurement instruments of foreign manufacture will be utilized, for instance for

pressure measurement in the upper level stations.

Extensive comparison of barometers

To improve the implementation of this project, the Department of Observations and Telecom-

munication of CMA, which is the topmost management office for meteorology in China, organized a comparison test for barometer performance. The Atmosphere Sounding Research Centre of China Meteorological Science Institute was responsible for the test design, setup, implementation and data collection. The comparison started with laboratory tests in 2000, with field tests then carried out from November 2000 to November 2001. They focused on the barometers' temperature stability and overall long-term stability.

The objective of the extensive test period was to choose which one or two pressure sensors would be most suitable for integration into the domestically manufactured automatic weather stations. Additionally, the aim was to improve the quality of air monitor prediction in China and to lighten the staff's workload, as well as to raise atmospheric forecasting accuracy and the level of automation in performing obser-

vations in China. Some leading barometer manufacturers from around the world and China applied for participation in this trial and test.

Vaisala barometers participated

Vaisala sent 3 units of PTB210 and PTB220 Barometers to be assessed in the trial. The Vaisala PTB210 series of barometers are intended for direct outdoor installations. They operate in a wide temperature range, with the electronics housing protected to IP65 class against sprayed water. The PTB220 Series Digital Barometers cater for measurements in a wide environmental pressure and temperature range. Both the PTB210 and PTB220 series of barometers are used widely in, for instance, weather stations, data buoys and ships, and are based on the BARO-CAP® pressure sensor. All six barometers showed very good performance during the trial and test. During the on site field tests trial, all barometers were installed in wind, rain, snow and shockproof test chambers under the same static pressure.

Comparison proved high performance of Vaisala barometers

The high reliability, accuracy and good stability of the Vaisala PTB210 and PTB220 Digital Barometers in this comparison proved once again that Vaisala products offer excellent quality. The good performance of the PTB series barometers was one of the most crucial factors for CMA in their selection and purchasing process. After comprehensive comparison and assessment CMA decided to purchase PTB220 barometers. Several



hundred units have been delivered to CMA.

Extensive cooperation between CMA and Vaisala

CMA is one of Vaisala's most

important customers in China. The various cooperation projects between CMA and Vaisala trace back to the founding of Vaisala's Beijing Representative Office in 1994. A set of MILOS 500 provided to CMA in August 1994

Barometers were tested on site for their stability,

was much appreciated due to its advanced technology and long-term stability, proven in a 10-month test in western rural areas of Beijing. Since then Vaisala has also provided CMA with RS80-15G Radiosondes, RT20 Radiotheodolites, DigiCORA Sounding Systems with GPS wind finding, and a number of other weather observation products. In 1997 Vaisala provided the Qinghai province with key hardware for a project called Disaster Weather Monitoring Network, with the help of a loan from the Finnish government. Vaisala's Beijing office often arranges seminars on various topics to introduce state-of-art meteorological technologies. Vaisala also invites experts and officials of all levels to visit the production plant in Finland. Their high-performance products have proven that Vaisala is one of the world's best companies in the field of meteorology. Consequently, they have won the confidence of Chinese meteorological customers. ●



Vaisala's PTB220 Digital Barometers are designed for measurements in a wide environmental pressure and temperature range.