

# Advanced, automated water treatment

## Nantong Water Treatment Co | China



Nantong water plant picks ABB WaterMaster magmeters for custody transfer at new giant pumping station in China

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Advanced, automated water treatment

### Introduction

The Nantong Water Treatment Co. serves the city of Nantong, a city with a population of about 7 million. A vital river port in Jiangsu province, Nantong is about a three-hour drive from Shanghai up the Yangtze River. The company's Langshan plant (see photo above) pulls water from the Yangtze at a rate of about 600,000 tons per day for treatment. When built in the year 2000, the plant boasted the most advanced and automated water treatment in China.

ABB products and systems participated heavily towards the plant's sophisticated reputation. The plant contains an ABB distributed control system (DCS) and 15 ABB electromagnetic flow meters. The ABB magmeters measure water flows and chemical dosing throughout the plant.

### For more information

Further details of ABB Measurement & Analytics products are available for free download from: [www.abb.com/measurement](http://www.abb.com/measurement)

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## WaterMaster meters for Nantong water plant

ABB is now participating in a new project called Chong Plant currently nearing completion. The project will help four nearby cities keep up with their increasing water requirements caused by burgeoning population growth. These cities; Haimen, Rudong, Tongzhou in Jiangsu province and Rudong near Shanghai; will be the recipients of treated water from the water treatment plant and giant pumping station nine kilometers from the river intake. An Engineering, Procurement and Construction (EPC) company called Pacific Water, based in Nantong, is managing the control system and instrumentation of the pumping station and its associated wide-ranging piping network.



New Chonghai Plant pumping station

According to Mr. Shaojian, the General Manager of Chonghai Water plant project, the water treatment plant has a capacity of 800,000 tons of water per day and will add 40 new employees to the company's current 600. "The station's 12 large pumps will supply 5 million more people residing over an area of 460 square kilometers (175 square miles)" says Shaojian.



Mr Shaojiann, General Manager of Nantong Water Chonghai Plant, next to Magmeter pit with Robert Mapleston of ABB

He notes that the new plant chose 28 ABB WaterMaster electromagnetic flow meters for custody transfer of treated water to the four cities. "One of the main factors in picking ABB WaterMaster magmeters is that the primary sensors are inherently submersible and may be simply buried in the ground" says Shaojian. "These large meters are installed in 2 meter (84 inch) pipes. Being buriable, they eliminate the necessity of being installed in large, underground concrete enclosures."

He says that meter installation merely involves excavating to the underground pipe, fitting the primary sensor, cabling to the transmitter and then backfilling the hole. "Buried meters result in significant installation savings," says Shaojian. Once a meter is installed, the company fills the hole with water to make sure its performance is unaffected.



**ABB WaterMaster magnetic flow meter prior to being submerged in pit**

Additionally, the meters are highly accurate, an important attribute for custody transfer operations. An automatic calibration process within the transmitter occurs every 45 seconds without interrupting the flow measurement. Digital Signal Processing (DSP) contributes to the superior accuracy for realtime measurements and maximum reliability. Using DSP, the transmitter separates the real signal from the interference from vibration and hydraulic noise associated with pumping stations.

With the increasing demands and costs for water, the company is also considering the purchase of ABB Aquaprobes, insertion magmeters, to monitor leak detection in the treatment plant. Another possibility is the installation of up to 400 ABB AquaMaster magmeters for direct billing of industrial water users.

The pumping station also includes ABB motors and drives to power the pumps while maximizing energy efficiency.

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**ABB Engineering (Shanghai) Ltd.**

**Measurement & Analytics**

No.4528, Kangxin Highway

Pudong New District

Shanghai 201319

PR

China

Tel: +86(0) 21 6105 6666

Fax: +8621-6105-6677

Email: china.instrumentation@cn.abb.com

**ABB Limited**

**Measurement & Analytics**

Oldends Lane

Stonehouse

Gloucestershire

GL10 3TA

UK

Tel: +44 (0)1453 826661

Fax: +44 (0)1453 829671

Email: instrumentation@gb.abb.com

**[abb.com/measurement](http://abb.com/measurement)**



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