

UNICO™ Online Monitoring

For optimized cooling system operation



ENERGY | ENVIRONMENTAL



Continuous monitoring with the UNICO system provides plant personnel with important real-time operating data, enabling them to make performance-enhancing operational decisions.

SPIG S.p.A. (B&W SPIG) has always been committed to providing high quality products and outstanding service.

To help optimize plant performance, we have developed the UNICO™ online monitoring system to analyze critical operating performance data on cooling towers, air-cooled condensers and air fin coolers.

Cooling towers may suffer from clogging, mechanical damage or corrosion, while air-cooled systems may experience heat exchanger surface fouling, leakages and corrosion.

This continuous monitoring system analyzes and processes a wide range of parameters and equipment conditions, helping to optimize cooling plant efficiency, reduce maintenance costs, and avoid unscheduled outages. Continuous monitoring with the UNICO system provides plant personnel with important real-time operating data.

Real-time data access via a smart system

The UNICO online monitoring system is based on a network of localized smart units that collect data, converts the information into digital form, and transmits to a supervisory system using wireless technology. The supervisory system validates and integrates the data in a single database. The system processes the acquired information to check process parameters, variability and equipment reliability. It also detects potential problems, generates alarms and determines counteractions which can help prevent loss of plant performance.



By presenting web-based data, the UNICO system's key performance indicators are remotely available anywhere in the world with Internet access.

All information from the UNICO system is securely accessible via the web, where graphs and tables display performance trends and parameters, operational variances, diagnosed faults, alarm messages and mailing actions. By presenting web-based data, these key performance indicators are remotely available to you anywhere in the world with Internet access.



B&W SPIG's UNICO system analyzes critical operating performance data on virtually any wet or dry cooling system.

BENEFITS

The unique UNICO online monitoring system can yield direct benefits in the following areas:

- ▶ Optimized equipment performance and output
- ▶ Reduced or avoided unscheduled shutdowns
- ▶ Reduced or avoided damage to ancillary equipment which may result from cooling system component failure
- ▶ Enhanced spare parts inventory control
- ▶ Improved operator safety

Features

- ▶ Converts data in engineering units
- ▶ Stores data with the data logger function
- ▶ Wireless data transmission
- ▶ Modbus RTU-BUS data transmission
- ▶ Connected by cable directly to a PLC or DCS
- ▶ Low power consumption
- ▶ Battery power supply or solar panel
- ▶ 12-24-48 volt DC; 110-230 volt AC external supply (advised)
- ▶ Alarm alert
- ▶ Maintenance software
- ▶ Online web client

Instrument Connection

All instruments are compatible with the UNICO system

- ▶ Features input signals: ohm, volt, 4-20 mA, impulse (Hz)
- ▶ 12-24 volt DC out

Typical instruments

- ▶ PT100 2-3-4 wires – water, air, oil temperatures [°C]
- ▶ Accelerometer 4-20 mA to 0-20mm/s [RMS]
- ▶ Accelerometer 4 mv/mm/s dynamics signal [FFT]
- ▶ Oil level switch and vibration switch
- ▶ Anemometer for air velocity [m/s]
- ▶ Flow meter for water velocity [m/s]
- ▶ pH, redox, conductivity transducer
- ▶ Air and water pressure [mm bar, bar, or mm H₂O]
- ▶ Weight filling [kg]

SPECIFICATIONS

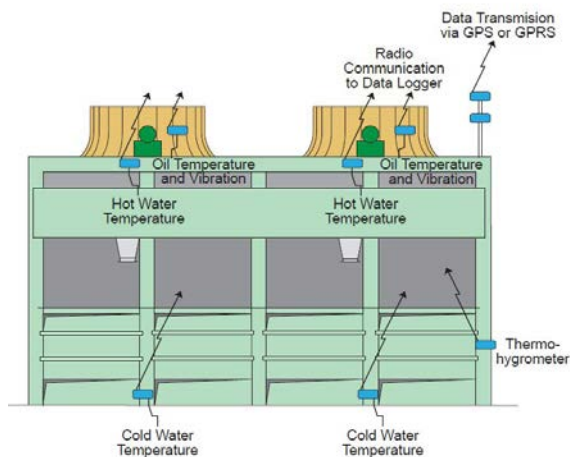
Analogic input	8 programmable
Digital out	2 programmable
Alarm response time	1 second, with radio at 800 ms
Input channel	0-1000 mV , 0-10 volt-4-20 mA 0-1 M ohm impulse
Resolution	0.05%
Convert unit @32bit	mm/s, mBar, °C, mmV/g
Out interface	2.4Ghz Radio Tx Rx, RS232-RS485 LAN 802.3 Modbus TCP/IP
Power supply	12-48 Vdc -110 230 Vac
Electrical consumption	1A
Case	Aluminum model SA

UNICO Certifications

IP 68 @ 1 meter depth
IEC 721-3-4 class 4M4

UNICO complies with:

ATEX II 2 GD Exdia
IIC T5/T6 Ex TD A21
INMETRO



The UNICO online monitoring system is based on a network of localized smart units that collect data and transmits the information to a supervisory system using wireless technology.



B&W SPIG's UNICO online system and software allows users to monitor, collect, analyze, and deliver critical information about your cooling system. You'll be better able to make operating decisions based on actual system data. The UNICO system is suitable to monitor virtually any wet or dry cooling system application.

About B&W SPIG

B&W SPIG, a subsidiary of The Babcock & Wilcox Company, is an Italian-based global provider of custom-engineered cooling systems and services. Established in 1936, B&W SPIG has project-related operations in nearly 50 countries and employs approximately 250 people in locations worldwide. We have been providing an increasingly extensive range of high quality cooling towers, air-cooled condensers and related services.

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For more information or to contact us, visit our website at www.babcock.com.