WE100 Barometric Sensor

Rugged Barometric Pressure Transmitter

Features

- Accurate 4-20 mA output
- Marine grade cable with strain relief

Description

Global Water's highly accurate WE100 Barometric Pressure Sensor covers a pressure range from 800 to 1100 mb (23.6 to 32.5 Hg). The transmitter is fully temperature compensated within an operating range of -40° to 65°C. It is attached to 25' of marine grade cable, with lengths up to 500' available upon request. The sensor's output is 4-20 mA with a two wire configuration, which, like all of our 4-20 mA sensors, is compatible with Global Water's GL500 Global Logger and PC300 Process Controller.

Specifications

Output	4-20 mA
Range	800 to 1100 mbar, 23.6 to 32.5 inHg
Accuracy	± 1% full scale
Linearity/Hysteresis	± 0.1%
Operating Voltage	10 to 36 VDC
Current Draw	Same as sensor output
Warm-up Time	3 seconds minimum
Operating Temperature	-40° to +55°C
Sensor Size	3 x 2 x 1" (7.6 x 5.1 x .5 cm)
Weight	0.13 lb (59 g)

Ordering & Options

Order No.	Description
WE100	Barometric Pressure Sensor (includes 25' cable)
WQEXC	Extra Sensor Cable, per foot (up to 500')

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Solar Radiation Sensor/Transmitter

Global Water's WE300 Solar Radiation Sensor is a precision pyranometer that uses a high stability silicon photovoltaic detector (blue enhanced) to obtain accurate readings. The WE300 includes a bubble level, leveling screws, and mounting hardware for a quality installation. The sensor is attached to electronics by 10 feet of cable, and the electronics are attached to 25 feet of marine grade cable, with lengths up to 500 feet available. The sensor's output is 4-20 mA with a two wire configuration.

In addition, Global Water offers the GL500 Solar Radiation Recorder, which adds recording capabilities to the solar radiation sensors. The GL500 Solar Radiation Recorder connects to the pyranometer's 4-20mA output to record data.

• 4-20 mA output
• Marine grade cable with strain relief
• Mounting plate included

Why Measure Solar Radiation?

Atmospheric circulation is driven by solar radiation. Determining the solar radiation and its interaction with the atmosphere and the Earth's surface is important, since solar radiation accounts for almost all of the energy available to the Earth. There are two ways solar radiation reaches the Earth's surface. The first is direct solar radiation where the solar radiation is directly transmitted throug the atmosphere. The second is diffuse solar radiation where the incoming solar radiation is scattered or reflected to the Earth's surface. Almost 50% of shortwave solar radiation is absorbed by the Earth's surface and changed into thermal infrared radiation. Direct solar radiation is measured by using solar radiation sensors or pyranometers. These type of solar radiation sensors have a transparent hemisphere which measures the total amount of shortwave solar radiation. Solar radiation sensors or pyranometers measure the total radiation or sum of the direct radiation and the diffuse solar radiation.
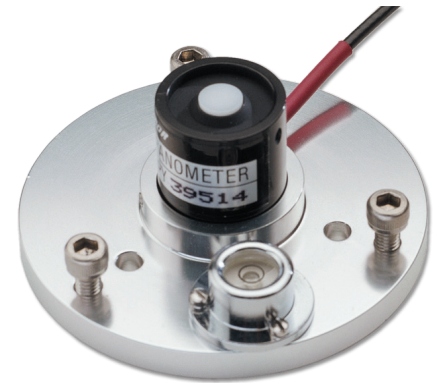
The WE300 can be used with the GL500-2-1 and GL500-7-2 dataloggers for data recording.
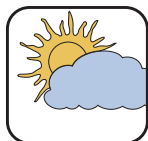
Ideal for agriculture, education, environmental studies, landfills, reclamation, wasterwater facilities, water conservation, and more.

Weather

www.globalw.com/products/we300.html
T: 800.876.1172/979.690.5560
globalw@globalw.com

Specifications

Sampler

Detector	High-stability silicon photovoltaic detector (blue enhanced).
Output	4-20 mA
Range	0 to 1500W/ m2
Spectral Response	400 to 1100 nm
Accuracy	1% of full scale
Operating Voltage	10-36 VDC
Current Draw	Same as sensor output
Warm Up Time	3 seconds minimum
Operating Temperature	-40° to +131°F (-40° to +55°C)
Sensor Size	3inch diameter x 1-1/2 inch (7.6 cm dia. x 3.8 cm long)
Weight	1/4 lb. (114 g)
For Ordering information and Options; please visit www.globalw.com/products/we300.html.	

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Wind Speed Sensor

The Global WE550 Water Wind Speed Sensor is constructed of high-impact materials, ensuring its durability and ruggedness even in severe weather conditions. The wind speed indicator has a very low threshold, and it responds accurately to subtle changes in wind speed. The wind speed transmitter is molded to 25 ft of marine grade cable, with lengths up to 500 ft available upon request. The WE550 output is 4-20 mA with a two wire configuration. The wind speed transmitter's electronics are completely encapsulated in marine grade epoxy within a rubber sleeve.

Global Water's PC320 Wind Speed Alarm and Controller uses the WE550 sensor's output to trigger motors and alarms. In addition, Global Water offers the GL500 Wind Speed Recorder, which adds recording capabilities to the WE550 Wind Speed indicators. The GL500 Wind Speed Recorder connects to the anemometer's 4-20mA output to record data.

- 4-20 mA output
- Marine grade cable with strain relief
- Fully encapsulated electronics
- 1inch mounting elbow

Why Measure Wind Speed?

Wind speed is an important weather parameter to monitor and record for many applications including meteorology, aviation, shipping, insdustry, construction, and many more. Some of the more common applications are for predicting and supporting weather forcasts, determining the saftey of operating mechanical equipment like cranes and lifts in industry, estimating the efficiency of operating power generating wind farms, navigation and safe operation in the shipping industry, aircraft safety, wastewater and landfill odor control, and others.

Wind Speed is caused by air pressure gradients or the regions between weather fronts, air moves in the direction of the low pressure system. The steeper the gradient the stronger the wind. Additionally, wind speed is determined by many other factors including the Coriolis effect, friction, and land topography. Wind speed is typically reported in meters per second or miles per hour in the United States. For the shipping or boating industry wind speed can be reported in knots (a knot equal to one nautical mile per hour or approximately 1.15 miles per hour or approximately 0.5 meters per second).

Ideal for agriculture, education, environmental studies, landfills, reclamation, wasterwater facilities, water conservation, and more.

The WE550 can be used with the GL500-2-1 and GL500-7-2 dataloggers for data recording.

www.globalw.com
T: 800.876.1172/979.690.5560
globalw@globalw.com

Specifications

Sampler	
Type	Three cup anemometer
Threshold	<=3 mph (1.35 m/s)
Output	4-20mA
Range	>=4 to 110 mph (>=1.8 to 50 m/s)
Accuracy	0.2 mph over the range 11 to 55 mph (0.09 m/s from 4.9 to 24.6 m/s)
Operating Voltage	10-36 VDC
Current Draw	Same as sensor output
Warm Up Time	3 seconds minimum
Operating Temperature	-40 ° to +131 °F (-40 ° to +55 °C)
Sensor Size	7 inch diameter x 8.5 inch (18cm diameter x 21.6 cm)
Weight	1 lb (0.5 kg)
For ordering information and options, please visit www.globalw.com/products/we550html.	

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WE570 Wind Direction Sensor

Rugged Wind Direction Transmitter

Features

- Fully encapsulated electronics
- Accurate 4-20 mA output
- Marine grade cable with strain relief

Description

Global Water's highly accurate WE570 Wind Direction Sensor is designed to accurately measure wind direction even in the harshest environments. The WE570 is molded to 25' of marine grade cable, with lengths up to 500' available upon request. The unit's electronics are completely encapsulated in marine grade epoxy within a rubber sleeve. The output is 4-20 mA with a two wire configuration, which is compatible with Global Water's GL500 Global Logger and PC300 Process Controller.

Specifications

Type	Wind vane with potentiometer
Output	4-20 mA
Range	0 to 360° (352° electrical, 8° open)
Sensitivity	1 m/s (2.2 mph)
Accuracy	1% full scale
Operating Voltage	10 to 36 VDC
Current Draw	Same as sensor output
Warm-up Time	3 seconds minimum
Operating Temperature	-40° to +55°C
Sensor Size	8½" dia. x 10½" (21.5 cm dia. x 26.7 cm)
Weight	1 lb (454 g)

Ordering & Options

Order No.	Description
WE570	Wind Direction Sensor (includes 25' cable)
WQEXC	Extra Sensor Cable, per foot (up to 500')

Humidity & Temperature Sensors

The Global Water WE600 Humidity Sensor is a precise, durable unit. Humidity sensors are composed of a solid state capacitative element with a linear amplifier. The humidity sensor output is 4-20 mA with a three wire configuration. The Global Water WE700 Temperature Sensor is a high quality, rugged instrument, precision RTD calibrated to US National Standards. The temperature sensor output is 4-20 mA with a two wire configuration. Each sensor is mounted on 25 ft of marine grade cable, with lengths up to 500 ft available upon request. The electronics are completely encapsulated in marine grade epoxy within a stainless steel housing.

• 4-20 mA output
• Marine grade cable with strain relief
• Fully encapsulated electronics

What is Relative Humidity?
Air moisture content is typically described by a relative humidity measurement. Relative humidity is the ratio of the water vapor content to the concentration of water vapor that the atmosphere could hold. In general, the relative humidity will vary inversely with air temperature so that the relative humidity is highest when the temperature is lowest, and vice versa. Typically after sunrise, when the air warms, the relative humidity falls. Relative humidity is typically given in a percentage reading. The vapor in the air is considered at 100% relative humidity when the concentration of water vapor in air is equal to the water vapor concentration at saturation.

Why Measure Relative Humidity?
Relative humidity has a major effect on the environment. Humidity readings provide a chance to control these effects. Effects include causing discomfort in people or animals, damaging materials in warehouses or other storage facilities, affecting the climates for optimal production processes, impacting the quality of construction materials and many others.

What is Temperture and How is it Affected?
Temperature is typically measured in degrees Celsius of Frhrenheit. To accurratly measure temperature the temperature sensor should be shielded from direct sunlight or precipitation and it should be adequately ventilated. Usually "surface" air temperature is measured approximately two meters above the surface.

The factors that affect temperature sensors include latitude, the movement of air masses, solar radiation, and nearby bodies of water or land. Typically solar radiation and latitude are the biggest influences on the temperature reading.

WE600-700 Rugged Humidity & Temperature Sensors with optional Solar Shield

www.globalw.com/products/we700.html
T: 800.876.1172/979.690.5560
globalw@globalw.com

Specifications

Humidity Sensor

Type	Capacitance
Output	4-20 mA
Range	0 to 100% RH
Accuracy	±2% RH
Operating Voltage	10-36 VDC
Current Draw	3mA plus sensor output
Warm Up Time	3 seconds minimum
Operating Temp	-40 to +131°F (-40 to +55°C)
Operating Temperature	14 to 122°F (-10 to +50°C) (Sensor); 32 to 122°F (0 to +50°C) (Meter)
Sensor Size	1-1/8 inch diameter x 7 inch (2.9 cm dia. x 18 cm)
Weight	0.5 lb. (227 g)

Temperature Sensor

Type	Precision RTD
Output	4-20 mA
Range	-58 to +122°F (-50 to +50°C)
Accuracy	±0.2°F or ±0.1°C
Operating Voltage	10-36 VDC
Current Draw	Same as sensor output
Warm Up Time	3 seconds minimum
Storage Temperature	-58 to +212°F (-50 to +100°C)
Sensor Size	3/4 inch diameter x 4-1/2 inch (2 cm diameter x 11.4 cm)
Weight	0.5 lb. (227 g)
For Ordering information and Options; please visit www.globalw.com/products/WE700.html	

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WE710 Surface Temperature Sensor

Flat surface temperature sensors for remote monitoring.

- 4-20 mA output
- Marine grade cable with strain relief
- Fully encapsulated electronics

Description

The Global Water Surface Temperature Sensors are high quality, rugged instruments with a precision RTD calibrated to US National Standards. The sensor's output is 4-20 mA with a two wire configuration. Each of the surface temperature sensors is mounted on 25' of marine grade cable, with lengths up to 500' available upon request. The sensor's electronics are completely encapsulated in marine grade epoxy within an ABS plastic housing.

Surface Temperature Sensor Applications
The surface temperature sensors are well suited for many applications including, pipe temperature monitoring, solar panel temperature, water tanks, control panels, and many others.

Specifications

Sensor Type: 100ohm Platinum Class A RTD
Output: 4-20 mA
Range: -58°F to +185°F (-50°C to +85°C)
Accuracy: ±0.5°F (±0.25°C)
Operating Voltage: 10-36 VDC
Current Draw: Same as sensor output current
Warm-Up Time: 3 seconds minimum
Adhesive Type: 3M #4910 Acrylic
Storage Temp: -67°F to +195°F (-55°C to +90°C)
Sensing Surface: 0.75x1.5 inch (19x38 mm) Aluminum
Housing: 2.0x1.1x3.8 inch (5x2.8x9.7 cm) (WxHxL) ABS
Weight: 13oz (368g) with 25 ft of cable

Options and Accessories

WE710 – Surface Temperature Sensor

WQEXC – Extra Cable, up to 500 feet
Cable length is measured from end of cable to bottom of sensor.

GL500 – Surface Temperature Sensor Data Logger

PC300 – Surface Temperature Sensor Controller

EZ100 – Surface Temperature Sensor Display