bug lab

Shown here: *BE*2100 Base Unit
used with *BE*2100 Sensor

Readout and Control for *BE*2100 Sensor

The *BE*2100 base unit accommodates one *BE*2100 noninvasive optical biomass sensor (sold separately). The *BE*2100 Base Unit supplies power for the sensor and its readings can be viewed on the fluorescent display. The operational parameters for the sensor can be adjusted through the keypad interface.

Software Included

The *BE*2100 base unit also allows you to communicate digitally with a *BE*2100 sensor using either an RS232 or USB interface cable, enabling straightforward integration into a fermentor or bioreactor control system or connectivity with a computer. The included software program provides intuitive controls and the ability to track growth in real time. The software can also calibrate the sensor to any desired units (OD, g/L, cells/mL, etc.) as well as track important events (e.g. inoculation, nutrient additions).

Simple Command Set

As an alternative to running the standard computer program, a well-documented serial command set is provided for communicating with the sensor using simple commands. The commands can be called from within any other computer program or control system that has the ability to send and receive serial commands. This makes it easy to integrate the BE system with other instrumentation. A LabView® instrument driver is also available on request.

BE2100 Base Unit
for BE2100 Sensors

Analog Output

The analog output at the rear of the BE2100 base unit provides signal current (4-20 mA) proportional to the reading of the sensor. The correspondence between the analog output and the sensor measurement is adjustable (using the "range" setting). The six logarithmically-spaced settings span range values from 0.01 to 1000. The analog output can be easily converted from current (4-20 mA) to voltage (2-10 V) using provided resistors. A second analog output is proportional to the exponential growth rate (in units of 1/hours).

USB, RS-232, 4-20 mA, or 2-10 V

Optional Connection
Required Connection
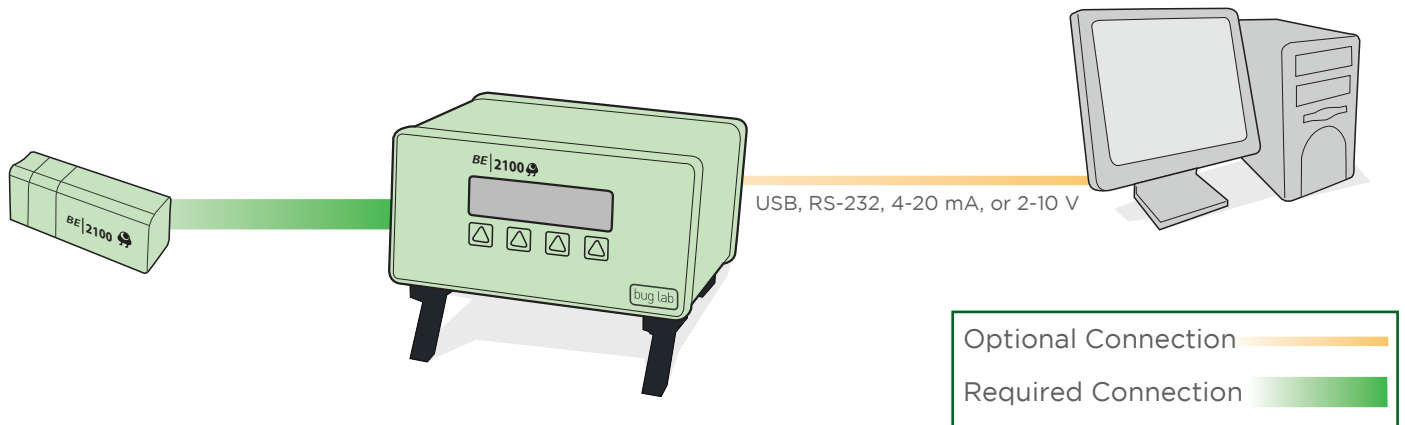
BE2100 Base Unit Features

Base Unit (Features)

Access to individual sensor and base unit settings through interactive keypad.

Password control (optional) of keypad access.

Lighted display with variable brightness control.

Digital (USB and RS-232) and four analog (4-20 mA or 2-10 V) outputs (biomass and growth rate)

User Interface Software (Features)

Real-time graphical and numerical display for each sensor.

Event marking on graph, both pre-defined and user-defined.

Baseline setting and subtraction.

User calibration of sensor output to any reference units.

Access to all sensor and base unit settings.

User Interface Software (Requirements)

Windows XP/ Vista / 7 Operating System.

Available USB or 9-pin RS-232 COM port.

Minimum 200 MB free hard disk space.

CD reader (required only at time of software installation).

*BE*2100 Base Unit Specifications

Base Unit (Electrical)

DC Power In (Both US and International plug adapters available)	9 V, 1 A
Certifications	CE marked. Tested for compliance to EMC standards EN55011 and EN61000, and safety standard EN 61010.
Sensor Input:	one *BE*2100 sensors
Connector	*BE*2100 sensor, female (4-wire, threaded)
Analog Output:	4-20 mA (500 Ω max.) or 2-10 V (using provided 500 Ω resistors)
Resolution	12 bits (0.004 mA or 2 mV)
Range Settings	6 settings, logarithmically spaced: 0.01-1000
Number of Outputs	4 ('+' and '−' screw terminal positions for sensor signal and exponential growth rate)
Digital Output	RS-232/DB9 and USB
Communications Cable (optional):	
Connectors	DB9 (M/F) or USB (A/B)
Length	
Standard	2 m (6')
Custom	up to 15 m (50')

Base Unit (Physical)

Overall Width	15.9 cm (6.2")
Overall Length (without connectors)	13.2 cm (5.2")
Overall Height (without feet)	8.2 cm (3.2")

Base Unit (Environmental)

Operating Temperature	0 to 40 °C (30 to 100 °F)
Operating Environment	dry location use only

132mm
139mm

159mm
82mm
123mm

96mm