Technical Data Sheet
BECSys2

BECSys2 water chemistry controls provide continuous monitoring and control of sanitizers and pH in a simple-to-use configuration. A backlit alphanumeric LCD displays pH and ORP readings as well as any active alarms.

An optional derived chlorine ppm display is available, which provides an approximation of the residual chlorine level on a 0.6 to 6 ppm scale. Operational settings are password-protected for system security.

The BECSys2 can be networked with other BECSys2 controllers for data-logging, remote access, and alarm notification purposes by adding an optional BECSys RCM (Remote Communications Module).

With the optional BECSys RCM connectivity features include the BECSys *Live!* online web portal, BECSys Now! App for iPhone/IPad and Android smartphones/tablets, Email and Text Message Alarm Notifications and BECSys for Windows PC software. The EZConnect™ system offers simple and secure remote access as an alternative to traditional IT-intensive remote access techniques and EZMail™ provides email alarm notification delivery without the need for local email server configuration.

Every controller comes complete with BECSys pH and ORP sensors, flow switch, machined flow cell, and factory-trained start-up and support provided by local distribution in most regions.

The BECSys2 flow cell can be pre-assembled at the factory and mounted with the controller on a back panel for convenient installation. In this configuration a lightweight PVC mounting frame is easily leveled and installed on the wall. The back panel assembly is then hung on the mounting frame through 4 teardrop holes. Tighten the four bolts, make plumbing and electrical connections and installation is complete.

Warranty
- 2 years electronics
- 2 years pH, ORP and temperature sensors
- 1 year all other components

Regulatory Approvals/Certifications
- NSF: NSF Certified and Listed to NSF/ANSI Standard 50
- USA: ETL Listed ANSI/UL 61010-1
- Canada: ETL Listed CAN/CSA C22.2 #61010-1
- Europe/CE: CENELEC EN 61010-1
  - European Community Low Voltage Directive 73/23/EEC
- Electromagnetic compatibility
  - FCC part 15 sub part B
  - EN 61326
  - European Community EMC Directive 89/336/EEC
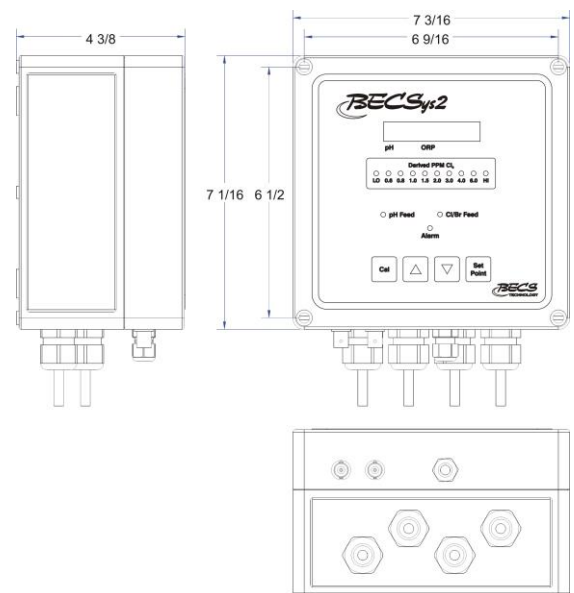
User Interface

- 16 character front panel backlit LCD display
- Front panel available with or without derived chlorine ppm level light bar
    - 0.6 to 6 ppm (with independent high and low ppm Indicator LEDs)
    - No ppm scale
- Display language is field programmable (English, Spanish, French)
- pH feed and chlorine/bromine feed status indicator LEDs

System Security

- Two levels of security access codes – Operator and Rep

Control Options

- Suitable for gas chlorine, sodium and calcium hypochlorite, bromine, and ozone applications
- Dual Setpoint Booster Mode (DSBM) – Provides configurable alternate set point for a secondary sanitizer feed, especially useful in controlling salt-chlorine generation systems
- pH control output configurable as feed-up, feed-down, or dual control
- Feed outputs configurable as ON/OFF or Time-Based Proportional

Safety Features

- **High/Low Alarm Settings & Control Lockouts:** Programmable high and low alarm settings for all inputs, and programmable lockout of sanitizer feed upon pH high or low alarm.
- **No Flow Alarm & Flow Restored Delay:** Assures sensors are monitoring an actively circulating water stream, with programmable control lockout following no-flow conditions.
- **Feed Limit Alarms:** Selectable failsafe timers to prevent overfeed due to equipment or systems failures.
- **Internal Safety Shield:** Prevents access to high voltage circuitry or wiring during fuse replacement.

System Inputs

- BECSys pH and ORP sensors
- Optional temperature sensor

Flow Cell

- Round PVC flow cell with pressure gauge, sample tap, and two ball valves for cell isolation
- Two flow switch options:
    - Reed flow switch (standard)
    - Rotary flow switch (optional)

Remote Access and Alarm Notification (with optional BECSys RCM)

- Ethernet with EZConnect
- Email and Text message alarm notifications via EZMail
- BECSys *Live!* Online web portal for BECSys controllers using EZConnect
- BECSys for Windows Windows™ 10 compatible PC software package
- BECSys *Now!* App for IOS iPhone/iPad and Android smartphones/tablets
- Wi-Fi compatibility with optional BECSys Wi-Fi module

Data-Logging (with optional BECSys RCM)

- Input readings history, with 1 minute resolution
- System events (e.g. alarms, parameter changes, user logins and operational cycles)
- Data logs automatically uploaded/maintained by EZConnect Server
    - Available to users via BECSys *Live!* Online web portal
- Download logs to USB flash drive for upload into BECSys for Windows

Specification/Ordering Guide

BECSys2 Specification/Ordering Guide				Selection
BECSys2-	**Flow Switch Type**			**01**
↓	E	Reed Flow Switch		
	O	Rotary Flow Switch (directional)		
	↓	**Overlay Selection**		**02**
	N	No PPM Scale		
	6	0.6 - 6.0 PPM Scale		
	↓	**Sensor Wire Length**		**03**
	S	Short (36 inch) Sensor Wires		
	L	Long (10 foot) Sensor Wires		
	↓	**Input Voltage Selection**		**04**
	1	115 VAC input power (standard)		
	2	230 VAC input power		
	↓	**Temperature Sensor**		**05**
	N	No temperature sensor		
	T	Temperature Sensor		
	↓	**ORP Probe Tip Material**		**06**
	P	Platinum Band		
	S	Solid Gold Band		
	↓	**Backpanel**		**07**
	B	Preassembled on backpanel		
	X	Shipped as a kit		
BECSys2 - O N S 1 T P B		Example Part Number		
		BECSys2 with rotary flow switch, No PPM Scale overlay, short sensor wires, 115VAC input, temperature sensor, platinum ORP probe pre-assembled on backpanel.		

Specification/Ordering Guide Selections

Flow Switch Type (Selection 01)

The flow switch is a vital safety component, which assures that water is flowing through the sample stream. When there is no water flowing through the sample stream, the sensor readings are not reliable.

There are two flow switch options
- Reed flow switch
- Rotary flow Switch, which only senses flow in the forward direction, so no check valve is required.

Reed

Rotary

Overlay Selection (Selection 02)

BECSys2 controllers have the option to display a calculated PPM value on the front panel. This is only an approximate representation of the residual PPM level, which is indicated by a series of LEDs.

Sensor Wire Length (Selection 03)

pH, ORP and temperature sensors can have two sensor length: 36" and 10'. The only reason to need 10' cable length is in situations where the flow cell will be mounted more than 36" away from the controller. When ordering a controller pre-mounted on a back panel the short (36") sensor wire length should be selected/specified.

Input Voltage Selection (ORP Selection 04)

The BECSys2 can accept 115 VAC input power or 230 VAC input power. In either case, the BECSys2 can accept either 50 or 60 Hz.

Temperature Sensor (Selection 05)

The BECSys2 can optionally accept a sensor to monitor and display water temperature.

ORP Sensor (Selection 06)

The standard ORP sensor is constructed with a platinum band electrode. A gold band version of the ORP sensor is also available, and may be beneficial in systems with salt chlorine generators.

Backpanel (Selection 07)

Shipped as kit: Flow cell will be delivered unassembled; installer will assemble flow cell per instructions provided in Installation Manual. No back panel will be included; controller and flow cell will be mounted directly to wall.

Preassembled on back panel: The flow cell is pre-assembled at the factory and mounted with the controller on a back panel for convenient installation. In this configuration a lightweight PVC mounting frame is easily leveled and installed on the wall. The back panel assembly is then hung on the mounting frame through 4 teardrop holes. Tighten the four bolts, make plumbing and electrical connections and installation is complete.
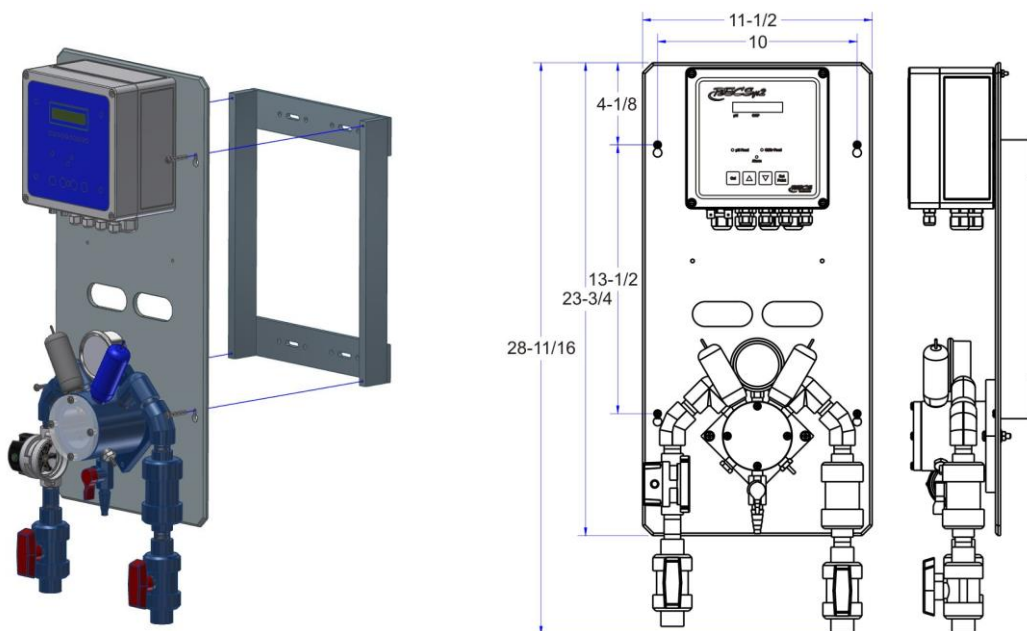
Specifications

Part Numbers

Part Number	BECSys2, See Specification/Ordering Guide for options
Firmware version	v1.40

Physical

Enclosure Material	Glass Reinforced Polycarbonate, NEMA 4X (IP66)
Overlay Material	UV Stabilized Polyester
Flow Cell Material	PVC Body, Clear Acrylic Window, Stainless Steel Hardware
Back Panel Material	PVC
Display	1 Row, 16 Character Back-Lit Alpha/Numeric LCD pH Feed, Cl/Br Feed and Alarm LEDs
pH and ORP Sensor Connection Type	BNC
Input Power and Relay Output Cords (115 VAC Controller)	SJTW Type Note: 230 VAC Controller is supplied without power cords

Environmental[1]

Storage Temperature	-30 to 60 °C
Ambient Operating Temperature	-18 to 40 °C
Ambient Humidity	95% non-condensing maximum

Electrical

Voltage	115/230 VAC, 50/60 Hz (Specify Input Voltage at Time of Order)
Phase	Single
Current 115 VAC Input 230 VAC Input	9.25 Amps Full Load (0.25 Amps: Controller, 9 Amps: Relay Outputs, 3A x 3) 9.125 Amps Full Load (0.125 Amps: Controller, 9 Amps: Relay Outputs, 3A x 3)

Performance

pH Range / Resolution	0 to 14 pH / 0.1 pH Units
ORP Range / Resolution	-1500 to +1500 mV / 1mV
Temperature (optional) Range / Resolution	32 to 150 degrees F (0 to 66 degrees C) / 1 degree (F or C)
RS-485	9600 bps at distances up to 4000 ft.
Relay 1 Output (pH Control)	Jumper Selectable to: ▪ Controller Input Voltage (115 VAC or 230 VAC), or ▪ Dry Contact (Supports 24 to 280 VAC)
Relay 2 Output (Sanitizer Control)	Jumper Selectable to: ▪ Controller Input Voltage (115 VAC or 230 VAC), or ▪ Dry Contact (Supports 24 to 280 VAC)
Relay 3 Output (User Selectable as: Sensor Wash, Dual pH Feed, Alarm, or Cl/Br Booster Feed)	Jumper Selectable to: ▪ Controller Input Voltage (115 VAC or 230 VAC), or ▪ Dry Contact (Supports 24 to 280 VAC)

[1]Environmental specifications are for controller only; specifications for sensors and other components vary, and are available in respective Data Sheets

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BECS TECHNOLOGY

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