

>>> **INSTRUMENTATION**



**Electrochemical, LEL, PID, IR\* –  
The Biosystems PHD6 has it all!**

## **BIOSYSTEMS PHD6**

### **MULTI-SENSOR GAS DETECTOR**

The Biosystems PHD6 is a state-of-the-art multi-gas detector from Sperian. It's the most configurable gas detector we've ever made with 5 sensor ports, up to 6 channels of detection, and over 19 sensor options including electrochemical, LEL, PID and Infrared.\*

Sperian built the Biosystems PHD6 to be reliable and sophisticated while maintaining the ease of use that you've come to expect from us. Day-to-day detector operations are controlled entirely through the mode button. A status bar on the display, with easy-to-recognize icons, gives the user immediate access to everything from time to calibration status. Built-in and easy-to-navigate menus give advanced users the ability to configure the detector in the field.

The Biosystems PHD6 is constructed of an impact engineered polycarbonate frame with rubber overmold, making it both

tough and easy to handle. Power comes from interchangeable alkaline or Li-Ion rechargeable battery packs with run times as long as 24 hours. A manual sample draw kit is included and an optional motorized sample draw pump is available.

To save on calibration costs and automate recordkeeping, Sperian is releasing the Biosystems IQ6 Express Dock alongside the PHD6. The IQ6 Dock can calibrate common PHD6 configurations in under a minute while reducing labor time and calibration gas costs. Concerned about record-keeping? With the IQ6 Dock, recordkeeping is automatic.

The Biosystems PHD6 and IQ6 Express Dock: Powerful allies to help keep you safe in dangerous conditions.

\* IR sensors available in Fall 2008

## KEY FEATURES

### 5 Sensor Ports and 19 Sensor Options

With 19 sensor choices, including PID, IR-CO<sub>2</sub>,\* IR-CH<sub>4</sub>,\* conventional LEL, oxygen and 15 different toxic gas sensors including Duo-Tox, the Biosystems PHD6 can be configured for just about any use.

### PID Sensor Option

PID sensor monitors for hundreds of known VOCs.

### IR CO<sub>2</sub> Sensor Option\*

For breweries, wineries and anywhere where accumulations of CO<sub>2</sub> can be an issue.

### Electrochemical Sensor Options

Choose from 14 different electrochemical toxic gas sensors.

### LEL Sensor Option

A catalytic hot-bead LEL sensor is available for the detection of combustible gases and vapors.

### IR CH<sub>4</sub> Sensor Option\*

Poison-proof technology for use in situations where a conventional LEL sensor can fail.

### Durable

The PHD6 is enclosed in a solid polycarbonate case with a TPE (rubber) overmold, so it's both tough and easy to handle.

### Interchangeable Battery Packs

Both Li-Ion and Alkaline battery packs offer up to 24 hour run times.

### Audible Alarms that Stand Out!

The new audible alarms in the PHD6 are unlike anything you've ever heard from a gas detector – and rated at 92 dB.

### Visible Alarms

Front and side mounted LED alarms are highly visible.

### Status Bar with Easily Recognized Symbols

Icons let the user know the status of the instrument. A heartbeat symbol beats every few seconds to let you know that the instrument is functioning normally. Calibration due is shown with a gas cylinder icon coupled with a triangular warning symbol.

### IQ Dock Compatibility

Reduce labor costs, automate recordkeeping and save calibration gas all at the same time with the IQ6 Dock.

### Intuitive Menu-Driven Instrument Configuration

Select from the Main Menu or the Basic Menu. Access all instrument configuration options from alarm settings to passcode access option to menus.

### Built-In IrDA Port for Easy Downloads

Every PHD6 includes a built-in IrDA port that allows the instrument to be configured with a PC. The IrDA port also allows instruments with the Datalogger upgrade to be downloaded in the field to retrieve data on calibrations and exposure levels.

### Certifications

- SGS USTC Class I Division 1 Groups A,B,C,D Temp Code T3C (Approved to UL-913)
- ATEX (DEMKO) Ex d 1500 (T3)\*\*
- IECEx Ex d 1500 (T3)\*\*
- CSA Class I Division 1 Groups A,B,C,D Temp Code T3C\*\*
- NEPSI (Chinese) Approval Ex d 1500 (T3)\*\*

\* IR sensors available in Fall 2008

\*\* Certification pending, check Biosystems.com for current updates

## Introducing...

## Biosystems IQ6 Express Dock

The Biosystems IQ6 Express Dock is designed from the ground up to be the easiest dock to use on the market. The dock is configured at the factory with default settings and can be used right out of the box for basic instrument processing. More advanced users will appreciate the standard USB or optional Ethernet connections that allow the dock's settings to be tailored to meet the specific needs of any gas detection program. The automatic instrument download feature allows the user to streamline recordkeeping and make it virtually hands-free. Common PHD6 configurations can be processed by the dock in under a minute, reducing labor and calibration gas expenses.

At Sperian, we're convinced that we make the best docks on the market. Our Biosystems IQ Express docks offer incredible processing power and flexibility while being extremely easy to use. The worker just drops the detector in the dock at the beginning of their shift and the dock processes the instrument according to your recordkeeping protocols. It's that easy.

It's pretty clear that docks can really make your life easier and streamline your gas detection program, but the question remains: Why spend \$495 to \$895 on a dock when you can continue to perform manual calibrations and recordkeeping?



Electrochemical, LEL, PID, IR\* –

# The Biosystems PHD6 has it all!



Weight	
With 5 Sensors, Rechargeable Batteries	1.00 lb (16 oz.)
With 5 Sensors, Rechargeable Batteries and Pump	1.30 lb (20.8 oz.)
With 5 Sensors, Alkaline Batteries	1.10 lb (17.6 oz.)
With 5 Sensors, Alkaline Batteries and Pump	1.40 lb (22.4 oz.)

Dimensions	
Without Standard Belt Clip	6 5/8" H x 3 1/8" W x 2" D
With Standard Belt Clip	6 5/8" H x 3 1/8" W x 2 1/2" D
With Pump, without Standard Belt Clip	8 1/2" H x 3 1/8" W x 2 3/8" D
With Pump and Standard Belt Clip	8 1/2" H x 3 1/8" W x 2 5/8" D

\* IR sensors available in Fall 2008

## Docks: An important part of an effective gas detection program

### Docks reduce calibration gas expenses

Sperian's docks use a lot less gas than is used during manual calibrations. Here's an example: If you have 10 Sperian gas detectors and follow the ISEA guideline that recommends daily sensor verification, you could spend over \$10,000 per year in gas costs. If you purchase a dock, you can reduce your gas costs by over 60%. So the Biosystems IQ Express Dock could save you well over \$6000 per year in gas costs alone. (The dock lists for as low as \$795.)

### Docks reduce labor expenses by cutting down on the time needed to perform a calibration

To set up and perform a manual bump test of a single instrument takes the average user about 2 minutes. A Biosystems IQ Express Dock can perform a bump test in about 22 seconds. If you've got ten instruments to bump every morning, you could save over 60 hours of labor by the end of the first year.

### Docks reduce labor expenses associated with recordkeeping

Let's face it: Recordkeeping is a lot of work. Downloading individual instrument records one at a time into a PC can take hours. Tracking calibration and exposure records by hand is even worse. In an IQ Express Dock both of these procedures occur automatically during instrument processing.

### Docks can reduce your legal liability

No matter how good your recordkeeping is, manual systems are prone to error. And in case of an accident, errors mean liability. Our docks accurately record every test.

## Biosystems IQ Express Docks pay for themselves in no time!

## Basic Sensor Configurations

Part Number	Common PHD6 Sensor Configurations
<b>1. Take the part number and add the suffix(es) from the chart below</b>	
54-53-A01028000	O <sub>2</sub> /CO/H <sub>2</sub> S/LEL
54-53-A01025080	O <sub>2</sub> /CO/H <sub>2</sub> S/IR-CO <sub>2</sub> */LEL
54-53-A01025100	O <sub>2</sub> /CO/H <sub>2</sub> S/IR-CH <sub>4</sub> *
54-53-A01025280	O <sub>2</sub> /CO/H <sub>2</sub> S/LEL/PID
54-53-A02198000	O <sub>2</sub> /H <sub>2</sub> S/CO-H/LEL
54-53-A02195080	O <sub>2</sub> /H <sub>2</sub> S/CO-H/IR-CO <sub>2</sub> */LEL
54-53-A02195100	O <sub>2</sub> /H <sub>2</sub> S/CO-H/IR-CH <sub>4</sub> *
54-53-A02195280	O <sub>2</sub> /H <sub>2</sub> S/CO-H/LEL/PID
54-53-A14008000	O <sub>2</sub> /Duo-Tox(CO/H <sub>2</sub> S)/LEL
54-53-A14005080	O <sub>2</sub> /Duo-Tox(CO/H <sub>2</sub> S)/IR-CO <sub>2</sub> */LEL
54-53-A14005100	O <sub>2</sub> /Duo-Tox(CO/H <sub>2</sub> S)/IR-CH <sub>4</sub> *

Part Number	Common PHD6 Sensor Configurations
54-53-A14005280	O <sub>2</sub> /Duo-Tox(CO/H <sub>2</sub> S)/LEL/PID
54-53-A03148000	O <sub>2</sub> /SO <sub>2</sub> /Duo-Tox(CO/H <sub>2</sub> S)/LEL
54-53-A06148000	O <sub>2</sub> /NO/Duo-Tox(CO/H <sub>2</sub> S)/LEL
54-53-A08148000	O <sub>2</sub> /Cl <sub>2</sub> (Non-Specific)/Duo-Tox(CO/H <sub>2</sub> S)/LEL
54-53-A09148000	O <sub>2</sub> /NO <sub>2</sub> /Duo-Tox(CO/H <sub>2</sub> S)/LEL
54-53-A10148000	O <sub>2</sub> /HCN/Duo-Tox(CO/H <sub>2</sub> S)/LEL
54-53-A12148000	O <sub>2</sub> /ClO <sub>2</sub> (Non-Specific)/Duo-Tox(CO/H <sub>2</sub> S)/LEL
54-53-A14158000	O <sub>2</sub> /SO <sub>2</sub> (Ext. Range)/Duo-Tox(CO/H <sub>2</sub> S)/LEL
54-53-A14188000	O <sub>2</sub> /Duo-Tox(CO/H <sub>2</sub> S)/Cl <sub>2</sub> (Specific)/LEL
54-53-A14208000	O <sub>2</sub> /Duo-Tox(CO/H <sub>2</sub> S)/ClO <sub>2</sub> (Specific)/LEL
54-53-A14218000	O <sub>2</sub> /Duo-Tox(CO/H <sub>2</sub> S)/NH <sub>3</sub> /LEL
54-53-A03148000	O <sub>2</sub> /SO <sub>2</sub> /Duo-Tox(CO/H <sub>2</sub> S)/LEL

Note: For additional sensor configurations, visit us at [http://biosystems.com/products/products\\_overview.asp](http://biosystems.com/products/products_overview.asp) and launch the new Biosystems PHD6 Configurator program.

## Suffixes (Suffixes specify battery type, kits and upgrades)

Battery/Kit/Upgrade	Suffix
<b>2. Select Battery Type</b>	A Alkaline Instrument Only
	N Rechargeable (Li-Ion) Instrument Only
<b>3. Select Calibration Kit (Optional)</b>	V Value Pack (Includes Small Cylinder Of Calibration Gas, Regulator and Foam-Lined Hardshell Carrying Case)(Alkaline Only)
	C Complete Kit (Includes Large Cylinder(s) Of Calibration Gas, Regulator and Waterproof, Foam-Lined Hardshell Carrying Case)
<b>4. Select Upgrades (Optional)</b>	D Datalogging Upgrade
	Y Vibrating Alarm Upgrade
	W Datalogging and Vibrating Alarm Upgrades

## Biosystems PHD6 Sensors

Part Number	Description	Range	Resolution
54-54-01	CO – Carbon Monoxide	0 – 1,000 PPM	1 PPM
54-54-02	H <sub>2</sub> S – Hydrogen Sulfide	0 – 200 PPM	1 PPM
54-54-03	SO <sub>2</sub> – Sulfur Dioxide	0 – 25 PPM	0.1 PPM
54-54-05	CO+ – CO Plus Provides Non-Specific Readout for CO & H <sub>2</sub> S	CO: 0 – 1,000 PPM H <sub>2</sub> S: 0 – 200 PPM	1 PPM 1 PPM
54-54-06	NO – Nitrogen	0 – 350 PPM	1 PPM
54-54-09	NO <sub>2</sub> – Nitrogen Dioxide	0 – 50 PPM	0.1 PPM
54-54-10	HCN – Hydrogen Cyanide	0 – 100 PPM	0.2 PPM
54-54-13	PH <sub>3</sub> – Phosphine	0 – 20 PPM	0.1 PPM
54-54-14	Duo-Tox – Provides Substance Specific Readout for CO & H <sub>2</sub> S	CO: 0 – 1,000 PPM H <sub>2</sub> S: 0 – 200 PPM	1 PPM 1 PPM
54-54-15	SO <sub>2</sub> – Sulfur Dioxide (Extended range)	0 – 150 PPM	1 PPM
54-54-18	Cl <sub>2</sub> – Chlorine (Specific)	0 – 50 PPM	0.1 PPM
54-54-19	CO-H – CO Minus H, Reduced Sensitivity to Hydrogen (H <sub>2</sub> )	0 – 1,000 PPM	1 PPM
54-54-20	ClO <sub>2</sub> – Chlorine Dioxide (Specific)	0 – 5 PPM	0.01 PPM
54-54-21	NH <sub>3</sub> – Ammonia	0 – 100 PPM	1 PPM
54-54-50	IR-CO <sub>2</sub> * – Non Dispersive Infrared Carbon Dioxide	0 – 5%/Vol. (0 – 50,000 PPM)	10 PPM
54-54-51	IR-CH <sub>4</sub> * – Non Dispersive Infrared Methane	0 – 200% LEL (0 – 10%/Vol.)	1% LEL
54-54-52	PID – Used for V.O.C. (Volatile Organic Compound) Detection	0 – 2,000 PPM	0.1 PPM
54-54-80	LEL – Combustible Gas	0 – 100% LEL	1% LEL
54-54-90	O <sub>2</sub> – Oxygen	0 – 30%/Vol.	0.1%

\* IR Sensors available 2008

## Biosystems PHD6 Accessories

Part Number	Description
54-54-102	Motorized Sample Draw Pump
54-54-106	Alkaline Battery Pack
54-54-107	Rechargeable Li-Ion Battery Pack
54-54-103-1	Li-Ion Battery Charger
54-54-103-12	Vehicle Charger (12VDC) (Includes Cigarette Lighter Style Adapter and Mounting Hardware)
54-54-104	Calibration/Sample Draw Cover
54-54-105	Manual Sample Draw Kit (Includes Adapter, Squeeze Bulb, 10' of Tubing and Sample Draw Adapter)
54-05-A0403	Sample Probe Assembly (Does Not Include Squeeze Bulb, Tubing or Sample Draw Adapter)
54-05-A0405	Sample Probe Assembly with 11.5" Stainless Steel Probe

## Biosystems IQ6 Express Dock

Part Number	Description
54-54-9200	IQ6 Express Dock with Fresh Air Port Plus 2 Calibration Gas Inlet Ports
54-54-9200N	Ethernet-Ready IQ6 Express Dock with Fresh Air Port Plus 2 Cal Gas Inlets
54-54-9400	IQ6 Express Dock with Fresh Air Port Plus 4 Calibration Gas Inlet Ports
54-54-9400N	Ethernet-Ready IQ6 Express Dock with Fresh Air Port Plus 4 Cal Gas Inlet Ports



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