



LOGIC BEACH Inc.

IntelliLogger

Web Page Serving Data Acquisition & Alarming System

Data Acquisition Applications

- Co-Generation and Combined Heat/Power
- Predictive Maintenance
- Photovoltaic Solar System
- Process and Stack Emissions
- HVAC and Clean Room
- Meteorological
- Environmental Remediation
- Food Processing
- Remote Asset Monitoring
- Water and Waste Water
- Field and Lab Product Test

Features

- View status and performance data on the Web with standard Web Browsers
- Simple graphical, icon-based instrument setup with HyperWare II™ software
- Easily created custom graphic Web pages
- Logger initiated FTP file transfers
- Email of alarms or logger status with data
- Compact Flash memory expansion



- Universal isolated analog inputs accept numerous sensor types
- Digital inputs: event, counter, frequency
- No licensing nor monthly service fees
- Fast and simple setup to deployment cycle
- B-Bus network bus for I/O and feature expansion
- 4 line x 20 character user-interface display

OVERVIEW

The IntelliLoggerä is a powerful instrument that incorporates Internet convenience to provide new levels of monitoring and control. Monitor remote site sensor and equipment status, receive alarms and system status via email (and SMS) and view historical performance profiles as well as actuate remote control all from within a Web browser.

Site monitoring and asset management is more important than ever and the IntelliLogger provides a new level of ease and simplicity for your critical monitoring applications. Able to perform multiple tasks, the IntelliLogger is capable of monitoring a system, recording critical parameters, generating information graphically for Web pages, and sending alarm/data emails. The IntelliLogger, with fully-isolated inputs, is designed to interface to most types of sensor and signal

inputs for complete system flexibility. Added to this is the graphical programming and logger setup via the NEW generation HyperWare-II™ software. Powerful, easy and flexible HyperWare-II creates simple to complex programs with conditional / intelligent logging and alarming strategies, data reporting schedules and full featured custom Web page serving.

Connect the sensors, program the IntelliLogger with HyperWare-II, connect a communication link (Ethernet, modem, RS-232, USB, RF modem, cellular CDMA/GPRS/GSM) and you are ready to view IntelliLogger-served data, system status and more from pre-programmed Web pages or *custom* pages specific to your application. Custom Web pages are viewed using GreenWaterä , a free Web browser from Logic Beach.

LOGIC BEACH INCORPORATED

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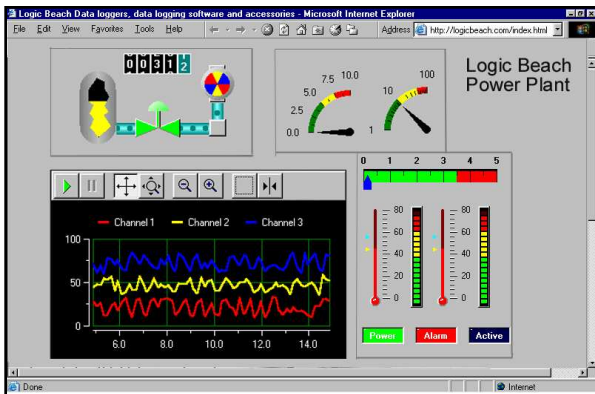
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DATA ACCESS AND VIEWING

Web page display of sampled data has never been easier. Readings are seamlessly embedded into standard provided pages for display in a Web browser or User-created custom Web pages. Custom pages are simply and quickly built to display data for your unique application.



Simulated Web page served by the IntelliLogger.

Alternatively, program the IntelliLogger to automatically send logged data to an FTP site via FTP (File Transfer Protocol). Email messages and alarms can be sent to multiple addresses (even SMS) with attached data or instantaneous values, alarm and input status.

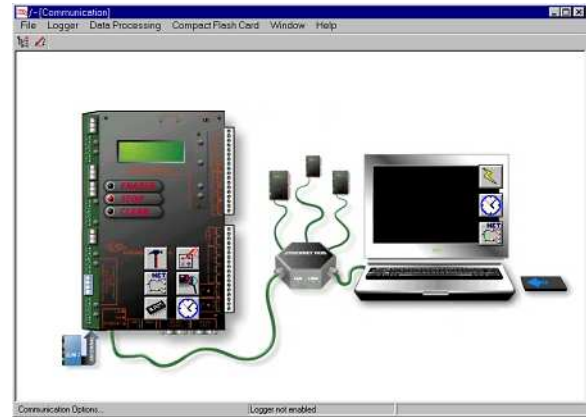
DATA LOGGER SETUP WITH HYPERWARE-II

HyperWare-II (HW-II) builds on the market proven HyperWare software. Drag-n-drop icons from the icon tool bar, then interconnect them with your mouse to quickly build a data logging and alarming program. HyperWare-II includes a full spectrum of features including Communications, Programming, custom Web Page design, Real-time data Viewing and Data Downloading.

1. Communications: Initial setup and programming between the client PC and the IntelliLogger is implemented via USB, RS-232 (wired or wireless), 10Base-T Ethernet (wired or wireless) and/or via an optional telephone, landline or cellular modem.

A communication dialog box allows for the creation and storage of communication data for all available loggers. Communications setup is completed in the dialog box and is a simple matter of selecting the type of connection and entering the appropriate phone number, COM port or IP address for each logger once, then just select the desired logger and connect.

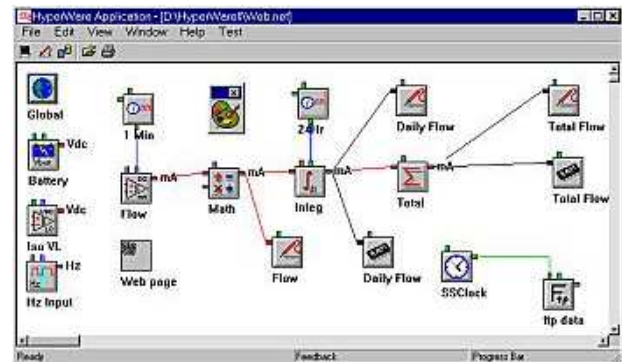
In addition to the integrated USB, Ethernet and RS-232 ports, Logic Beach offers a number of optional communication solutions including cellular, RF spread



Communications Screen showing IntelliLogger connected to an IL-80 via Ethernet.

spectrum, wireless Ethernet bridges and 802.11b communication devices.

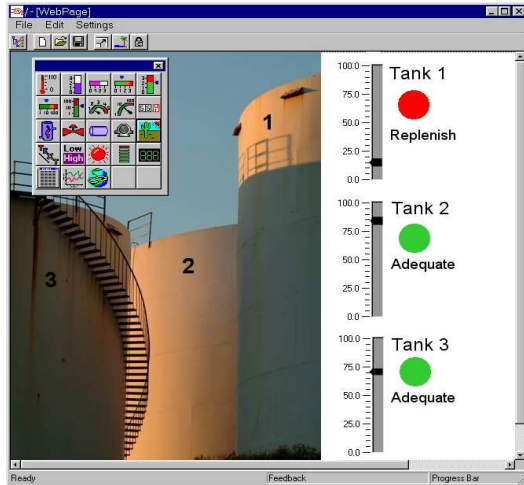
2. Programming: An intuitive programming environment allows for simple to complex program development via drag-n-drop icons. Icons representing hardware input channels, processing (e.g. math, statistics, logic, setpoints, etc), and outputs (memory, LCD display, FTP data transfers, alarms, Email, Web pages, etc.) are all available for quick configuration and integration into the program.



Sample HyperWare-II program includes Web page and scheduled data FTP. Icons are interconnected to create a flow monitoring program.

Input icons are “connected” to processing icons or output icons in a logical manner representing data flow and programming needs. This network of icons represents the data logger’s instructions. When completed, the Program is transferred to the data logger by simply dragging the Program Icon to the data logger graphic in the Communications Screen. Simple and intuitive.

2. Web Page Configuration: Custom Web pages are graphically configured for a multitude of data display formats providing a unique custom presentation for each location monitored. A graphical Web page editing screen is available to design your custom Web page so knowledge of HTML programming is not required. There



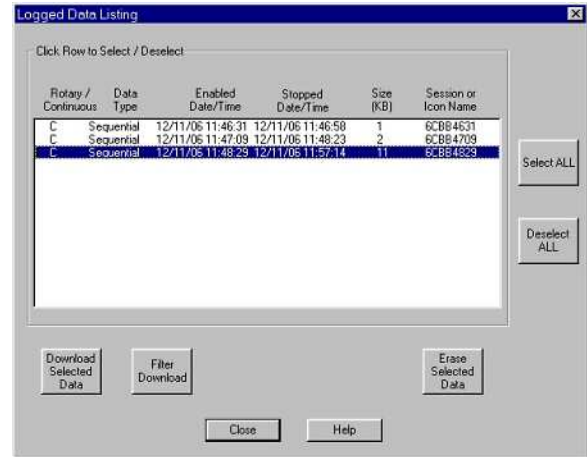
Simulated tank monitoring Web page. Tank level plus Replenish indicator, easily constructed in HyperWare-II.

are 22 user-configurable objects available for use in the creation of custom Web pages. Drag-n-drop each object and double-click to change the object's scaling, colors, fonts, background, pointers and more.

5. Real-time Viewing: Through HyperWare-II, current values and input states can be viewed in the same manner as a custom Web page. Objects are placed on the screen and assigned an input or function to monitor. There are 22 object available for use in creating your unique real-time data display. Angular gauges, digital displays, pumps, tanks, pipes, indicators, bar graphs and text are combined to present values or indicate change or movement. A fully customizable plotter is also provided for following trends.

4. Data Download: Downloading data from the IntelliLogger is possible via a number of methods. Select from commonly supported formats, CSV, tab and space delimited, and HW-II raw data for downloads. HW-II includes filtering capabilities allowing users to specify data type, time and date to download only required records for a specified time period. Downloading data using HyperWare-II takes place in the Communication Screen and is accomplished by simply dragging the Memory Icon from the IntelliLogger graphic to the PC graphic.

Data retrieval methods include:



Data download filter in HyperWare-II.

- *HyperWare-II:* User-initiated download using HW-II. Allows for data filtering.
- *Web Page:* The Logged Data Listing Web page served by IntelliLogger details all recorded sessions available for download. Download to browser in HTML or Text format. Allows for data filtering.
- *Email:* Logger initiated Emails with attached selective data, alarm values and most recent values. Select from CSV, tab, space-separated or raw data files. Requires network connection via Ethernet, dial-up modem to Internet Service Provider, or cellular modem connection to Internet Service Provider.
- *FTP file transfer:* Logger initiated autonomous action. Uses File Transfer Protocol to send data to PC running an FTP file server. Provides for downloading of all data or selective data, alarm values and most recent values. Select from CSV, tab or space-separated or raw data files. Requires network connection via Ethernet, dial-up modem to Internet Service Provider, or cellular modem connection to Internet Service Provider.
- The optional *M2M Probe Sweep* software application from Logic Beach automates receipt of Probe Points values and integration into a growing database.

SPECIFICATIONS:

IL-80 DATA LOGGER:

Top-of-the-line IntelliLogger includes all the features and functions as IL-20 and contains one built-in ILIM-7, 8 channel high-accuracy Isolated Interface Module for a total of 15 inputs: 7 inputs: 3 low resolution analog, 4 hi-speed digital, 8 bi-polar differential inputs, 5 outputs: 2 TTL level, 1 5Vdc, 2 relays. I/O expansion via Bbus.

ILIM-7 EXPANSION INTERFACE MODULE:

8 differential, bipolar, isolated inputs, identified **A** thru **H**. Input types: thermocouples, VDC, mAdc via field selectable DIP switch and software settings.

Thermocouples (all channels): J, K, E, T, R, S, accuracy (combined CJC and TC): +/-1C typical; +/-2C Max

mAdc (all channels): 8 ranges from +/- 0.19mA to +/- 22mA.

Vdc (inputs A-D): 11 ranges from +/-19mv to +/- 30V, (inputs e-h): 8 ranges from +/-19mV to +/-2.2V

Accuracy: 0.1% to 0.01% FS with 15-18 bit resolution depending upon range.

Sample rate: 16 samples/sec single input, 1.3 samples/sec all 8 inputs. Rates slow with additional inputs and program complexity.

IL-10 INTELLILOGGER:

Entry-level system with 7 inputs: 3 low resolution analog, 4 hi-speed digital, 5 outputs: 2 TTL level, 1 5Vdc, 2 relays. No I/O expansion via Bbus.

Analog Inputs: 3 differential, bipolar, 10-bit resolution.

Channel A and B programmable gain.

Vdc: 20mV to 2.0VDC - 8 ranges

mA: 200uA to 20mA - 8 ranges

Accy: +/- 0.1% FS typ., +/- 0.3% FS max.

Thermocouple: (combined CJC and TC)

Type J,K,E,T: +/-2C Typ. 6C max

Type R,S: +/-3C Typ. 12C max

Channel C fixed gain.

Vdc: -1.1Vdc to 3.2Vdc, accy: +/-0.2%FS or -11mA to 32mA, accy: +/- 0.3%FS.

Sample rate: 80 samples/sec single input. Rates decrease with added inputs and program complexity.

Digital Inputs: 4 high speed, individually programmable for event, counter or frequency measurement. Software selectable.

Frequency Input:

100mV Sine Input: Range: 0.25Hz to 22KHz

Accuracy: +/- 0.3% of Rdg Typical, +/-0.5% of Rdg Max

1.0Vdc Sine Input: Range: 0.04Hz to 150KHz

Counter Input:

Hi Input: 2.5 to 30Vdc

Low Input: 0 to 700mVdc

Input Frequency Range: 0 to 25KHz

Debounce Filtering: 35 Hz cutoff with 0/4Vdc square wave input

Event Input Channels:

Hi Input: 2.5 to 30Vdc

Low Input: 0 to 700mVdc

Pullup Enabled Wetting Current: 65uA

Digital Outputs: 2 Form C relays (500mA) NO & NC contacts, 2 – TTL level, 1 - 5Vdc +/-150mV, +/-20mV 0 to 10mA, +/-100mV 20 to 50mA. All software controllable.

Analog Outputs: 2 buffered 8 bit, 0-5VDC

No Bbus for I/O expansion.

CJC Accuracy: +/-3C max, +/-1.5C Typ. -40 to 70C

Includes: HyperWare-II software, PDF manual, power supply, USB and Ethernet cable, HW-II training.

IL-20 INTELLILOGGER:

Expandable entry-level system with 7 inputs: 3 low resolution analog, 4 hi-speed digital, 5 outputs: 2 TTL level, 1 5Vdc, 2 relays. I/O expansion via Bbus.

Includes all the features and functions as IL-10 but also includes Bbus for I/O expansion with additional isolated analog inputs via ILIM-7. Bbus connection via Cat 5 cable.

COMMUNICATIONS SUPPORT: RS-232, USB 1.1, 10BaseT Ethernet. Bbus – proprietary serial bus for I/O and functional expansion. Optional 56K telephone, RF and CDMA/GSM/GPRS cellular modem. IL-10 does not include Bbus.

POWER: IL-10 AND IL-20: 7-30Vdc, 50mA. ILIM-7: Adds 60mA (powered via Bbus 4 units max, 5+ requires Bbus power booster)

OPERATING TEMPERATURE: -40 to 70°C

DIMENSIONS: IL-80: 6.3”d x 9.4”w x 1.8”h. IL-20, IL-10, 5.4”d x 9.4”w x 1.0”h. ILIM-7: 6.3”d x 9.4”w x 1.0”h.

APPROVALS: FCC class II, CE pending

PC REQUIREMENTS

HyperWare II: Windows 98, 2000, NT, XP. USB or RS-232 port. Windows IE 4.0 or later for Web based viewing.

INTELLILOGGER SOFTWARE OPTIONS

M2M Probe Sweep (MPS) is a Windows application which generates an archive data file from FTP'd Probe files originating from one or more IntelliLoggers™ systems. The resulting archive 'Destination File' is of CSV format and can be viewed using Excel or integrated into more powerful enterprise wide data base applications.

IntelliLogger, HyperWare-II and M2M Probe Sweep are Trademarks of Logic Beach Inc.

Specifications subject to change.

IntelliLogger_V9.doc