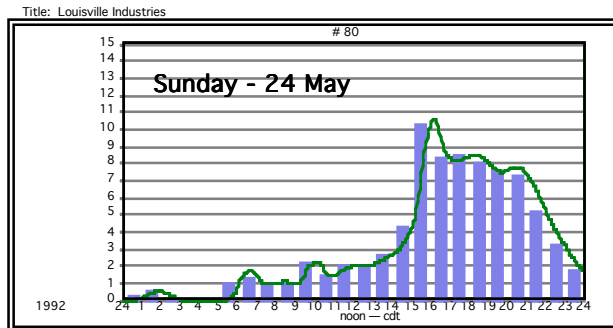




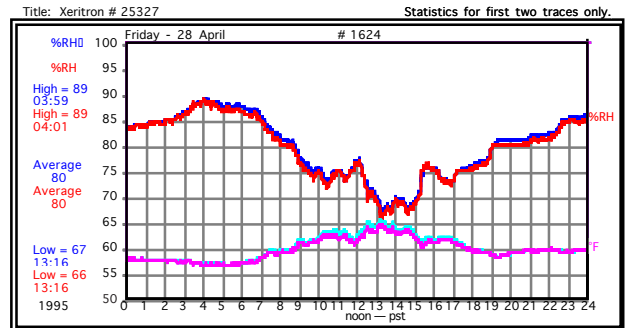
langan measurers



DataBear™
Langan Products, Inc.

1-hr means

A day of hourly CO averages with associated 'running' hourly mean. (MacOS).



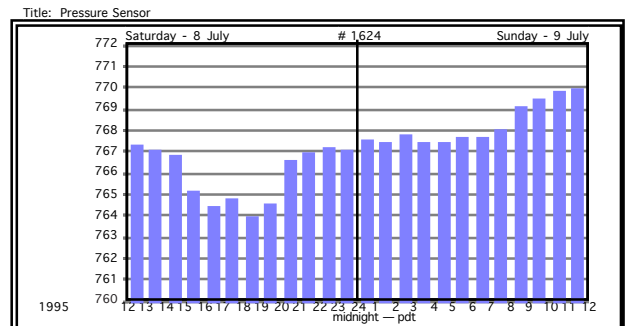
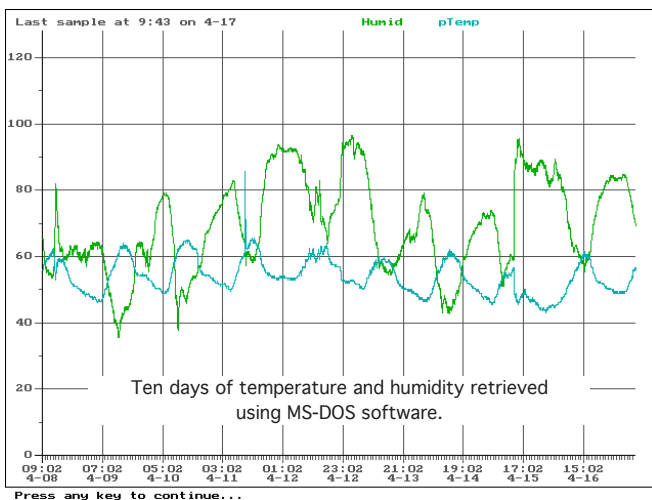
DataBear™ Measurer
Langan Products, Inc.

A 24-hour calendar plot of two humidity (%RH) and two temperature (°F) outdoor probes using MacOS software:

Langan Products, Inc., 2660 California Street, San Francisco, CA 94115 USA
(415) 567-8089 (voice/fax) — email: sales@langan.net

Sensors + Storage + Software = Miniature Measurement Systems

- *Portable, Reliable, Pocket-Sized Tools – fit your pocket*
- *Designed for Education, Industry and Science – quantify your environment*
- *Built-in Data Acquisition – save weeks or months of results*
- *Comprehensive Software Included – comprehensive MacOS or DOS interface*
- *Ready to Use Upon Receipt – operating when shipped*
- *Applications Galore – comprehensive real-world data available to show uses*
- *Field Tested – used around the world under 'in-field' conditions*



DataBear™ Measurer
Langan Products, Inc.

Hourly averages of barometric pressure overnight (mmHG) using MacOS software:

Ask about our other Miniature Measurers to gather data for weeks, months, years:
High Resolution Carbon Monoxide Measurer; Agricultural Measuring Station; Solar Radiation Measurer;
Sulfur Dioxide Research Measurer; Carbon Dioxide Measurer, DataBear Measurer (5-channel DAQ).

Fit the human range...

At Langan Products, Inc. we specialize in gathering data within the 'human range', where four parts in one thousand and samples each second (or slower) are meaningful.

Put anywhere to measure...

Langan Miniature Instruments provide independence for the user. In their most simple use they replace the time-honored chart recorder. When field-tested measurement solutions are added, they replace far more cumbersome traditional recording systems. They are small, handy, last a long time and fit anywhere.

Real time calendar plus temperature, always...

A calendar clock is included in each instrument. So is an internal temperature sensor. Where appropriate, optional digital displays are available.

Sample for weeks or months, any-number-of-second intervals...

The included software retrieves thousands of values-- each measured vs time and date. A total of 30,720 samples are saved and a 2,048-character information block is created to identify each measurement project.

Rugged and reliable...

The rugged Kydex® Plastic case protects the electronics and includes internationally available AA-cells used for power. For extended periods any 6 to 15 VDC source can be used.

Use sought-out world-standard sensors...

Each sensor is manufactured by specialists in the parameter to be measured. Thus, the physics of converting natural phenomena to electricity are understood by the professionals who created these transducers. Langan Products incorporates them into complete miniature instruments.

Ask for application facts...

A continuing series of application notes, the Bear Facts, cover details of various uses of these instruments as well as discussions about their capabilities. Over 80 have been published through mid-1997.

Published reprints of technical papers are also available.

An Essay on Data Logging

Our business is to design, manufacture and market small and portable instruments which are complete, as delivered. They combine the best sensors, unique data-acquisition storage and software to provide user-requested presentations.

It is welcome knowledge that digital data acquisition is supplanting chart records for most long-term observations. Familiar charts can be created from the stored data and so much more can be accomplished once the data are in digital form. Our software accomplishes this.

Combining off-the-shelf data loggers with sensors can be a daunting task. It takes engineering understanding and the confidence that comes with experience. We find that all end-users want reliable data, and many do not want to spend their time or resources learning the details of how this is done. Our instruments provide a sensor-storage-software complete solution.

We concentrate on portable applications. Our instruments do not require a computer when operating. Self-contained, they can be placed almost anywhere. They use the power of the computer for analysis and assimilation after acquisition.

The where and when of data logging is easily lost over time. If lost, or the notes become murky, the data may become worthless. All of our systems save an information block which contains details about the data collected-- the calendar time, calibrations, names, locations, your inputs and a unique hardware serial number. This block is saved with future files. Our concern for field operations provides the means for a data trail, even in the archives.

Transducers, the sensors that convert physical phenomena to electrical signals, are constantly under development. Microminiaturization and nanotechnology are driving forces to create new and more reliable ways to observe our environment. We focus on keeping aware of developments and the synergy that can result from the cross-fertilization of different approaches. We look for small and innovative solutions-- and welcome user input.

These small instruments can find themselves anywhere. It is our intent, as well, to help assure that system integration is considered. We have remote communication solutions-- modems from around the world, radio links, LANs. We know about radiation shields, solar power, calibration techniques, 'standards'. Our goal is to help integrate your measurements and needs.

The very act of data collection requires that the user is willing to understand, or at least appreciate, the phenomenon under observation. By reducing the frustration that can be involved in gathering useful data, we allow the user to concentrate on the meaning of the data gathered.

The end desire may be to monitor until an alarm occurs, to present daily records for publication, to log for a scientific or engineering project, to teach, to audit, to provide archival details-- whatever the use, our business philosophy is to help the user understand if and how our instruments can be an efficient and economic benefit.

Leon Langan, President

March 1992

What was written five years earlier remains our philosophy and our business goal. Over this period we have made advances in details, we have tested our instruments under a wide variety of conditions and places around the world, we have expanded our software analyses and interfaces. In other words we have continued to evolve.

Where we see that progress can be made we strive to incorporate new technology. Otherwise we have remained with field-proven methods and capabilities. The tools we use to enhance our instruments-- the desktop and portable computers-- have become faster and smaller and less expensive. They do the same thing, however: they allow users to comprehend what the measurements can tell us about the environment we measure.

Measurements are fundamental to our understanding of the world. Our 'measurers' allow users to capture variations over time to help understand how they impact on business and comfort, care for materials, predictions of change. They allow the casual user, the student, the professional alike to visualize changes that otherwise go unnoticed. Langan Measurers make the invisible visible: temperature and pressure, water vapor and carbon monoxide.

Leon Langan, President

July 1997

Leaders in Portable Instruments... Combined Sensors, Data Storage, Analytical Software

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