General Description
The YESDAS-2 system breaks the data logger price/performance for professional high availability data collection of environmental field data. With dramatically faster processing, superior conversion precision, and unsurpassed memory and I/O management, the 12 MHz YESDAS-2 redefines the state-of-the-art in remote data acquisition systems. The YESDAS-2 system is a complete package, with standard RS-232 interface, medical grade linear power supply, all protected in a weatherproof NEMA enclosure. Unlike many data loggers, the YESDAS-2 system's electrical specifications are guaranteed over the ±50°C environmental temperature range.

In addition to the YESDAS-2's enhanced performance, its flexible hardware and software make it extremely versatile. Up to 32 analog sensors can be connected and sampled via the YESDAS-2's advanced 13-bit self-calibrating analog-to-digital converter (ADC). Within these 32 channels are 4 "universal" channels that can be user-configured as differential or single-ended amplifiers with fixed gains from 1/10 to 1000, or as transimpedance amplifiers for converting a current to a voltage. In addition, 8 channels have high gain amplifiers allowing signal measurement down to the microvolt level. An optional daughter card converts the upper 16 single-ended analog inputs to full differential inputs, and lowpass filtering for them. Used with the 4 user-configured channel amplifiers, up to 20 differential signals can be connected, along with 12 single-ended inputs.

Additional analog inputs are 6 digital counter and accumulator channels for tipping bucket rain gauges, anemometers, etc.; and a stepper motor channel that controls an automated shadowband, if it is connected. In addition, when the YESDAS-2 is configured with its optional GO-FORTH real time operating system, PROM, 2 stepper motor controller channels and 4 digital-to-analog converter outputs can control external devices. With GO-FORTH, YESDAS-2 becomes a flexible automation platform upon which sophisticated control applications can be developed.

Applications
- Environmental and meteorological monitoring
- Acquisition of industrial process control data
- EPA compliance
- Ambient air monitoring
- Solar radiation applications
- General research
Data communications compatibility is assured by full support of the EIA RS-232C communications interface at the hardware level, and the XMODEM file transfer standard at the software level. Both hardware and software flow control is provided for those applications that require it. Virtually any telecommunications program that supports the XMODEM checksum protocol can be used to connect to the YESDAS-2 and retrieve data from it. A RJ-11 jack is provided, complete with lightning arrester; all you need is a Hayes-compatible Modem telephone or direct serial line.

**Software Support**

YESDAS-2 customers gain access into our family of Support Software. This family is made up of programs that interact with the YESDAS-2 data logger and run on the PC, Macintosh®, and Unix platforms. The level of multi-platform operation provides flexibility for large organizations, with several computer architectures and operating systems, to manage the YESDAS-2 and its data. These programs communicate with the YESDAS-2 system through the HDLL Data Logger Language. HDLL is a simple, human-readable control language that allows both human and program control of multiple YESDAS-2 systems. The user need not learn a new language in order to run it; there are just a few basic commands to master.

On the PC platform, users have a wide variety of options. Any telecommunications program that supports XMODEM checksum file transfers can be used to call the YESDAS-2 and transfer data to the PC. For DOS 6.X users the standalone DOSBand unpacking program converts raw binary data into an ASCII file that can be directly read into a IBM/Lotus 123 or MS-excel spreadsheet for analysis or display.

MS-Windows 9x/NT uses benefit from the optional YESDAS Manager package to provide automated collection and display via the web. Macintosh users can use MacBand to retrieve, analyze, and display data. This architecture lets mathematically intense correction algorithms take place on the PC, not the logger. On the Linux or Sun platforms, command tools are optionally available to unpack the data and process it. However, YESDAS Manager on MS-Windows NT is the platform of choice for supporting large networks of geographically separate YESDAS-2 systems with multiple data users.

To support consistent processing of analyze data from different instruments connected to a YESDAS-2 into the format of your choice, the QED data processing language provides a simple, yet flexible, data transformation tool for manipulating columns and converting to engineering units. Raw data retrieved from a YESDAS-2 is binary-packed for efficient communications, and is unpacked into human-readable ASCII format, setup for direct import into spreadsheet programs such as MS-Excel® or IBM Lotus 123® into charting programs such as Gnu Plot.

**User software is multi-platform**
Data display on various platforms can be handled via the GNU-Plot plotting tool or by other 3rd party commercial plotting applications. The web server built into YESDAS Manager makes it especially easy to provide users with direct web access to retrieved YESDAS-2 data via the web. IBM AIX® and DEC Ultrix® versions are available on special order.

**Features and Benefits**
- Flexible baud rates: 1200, 2400, 9600, 19200
- Data is binary-packed for efficient transfer
- XMODEM protocol ensures data integrity

**Excellent I/O Value**
- 32 analog input channels, with
- 4 user-configurable amplifiers (current or voltage)
- 8 high gain amplifiers (as low as 1.2 µV/count)
- Self-calibrating 13 bit analog-to-digital converter
- 6 Pulse counters and accumulator inputs
- Shadowband stepper motor support
- Ultra-stable timekeeping

**Multi-Platform Software**
- Windows 9x/NT, DOS, Mac and UNIX support for retrieving, unpacking, and analyzing data
- ASCII data output format can be directly imported into popular third party spreadsheets, graphing programs and database tools
- Modular software architecture is highly robust
- PROM based firmware and passwords prevent power failures from corrupting system

**Connectivity**
- Standard RS-232C serial communications port with support for hardware flow control. No need to buy extra proprietary serial interfaces
- Supports user-supplied Hayes compatible modem
- Supports XMODEM automatic error detection file transfer protocol
- Enclosure provides plenty of room for mounting standard user-supplied signal interface and input conditioning modules
- Sockets on critical parts allow users to make field repairs of lightning damaged parts
- Highly integrated design improves reliability
- Circuitry for automatic thermal control of a user-supplied instrument deicing heater. System can shut down under low battery voltage conditions
- One year limited warranty

**Options**
- PCMCIA 1 or 2 Mb memory card interface
- 16-channel auxiliary amplifier board provides differential-to-single ended conversion and low-pass filtering for the 16 of the upper 32 inputs.
- Optional GO-FORTH firmware converts it into a versatile remote real time control platform with dual stepper motor and quad DAC outputs
Specifications

| Dimensions: | 17.50(44.45) H x 15.50(39.37) W x 6.50 (16.51) D in/(cm): |
| Weight: | 25 lbs. (11.3 kg) |
| Power: | 115/230VAC, 50/60 Hz with ±15% tolerance on AC supply mains, 1/2 Amp maximum, or 13.8 VDC @ 200 mA maximum. 6’(2M) AC cord and 15’ (5M) battery cable provided |
| Temperature Range: | ±50°C (operating or storage) |
| Analog Inputs: | 32 single ended inputs with 4 chopper stabilized amplifiers, configurable for differential current or voltage sensors, gains up to 1000 X. 8 additional amplifiers allow voltage gains up to 1000 X. These channels can resolve voltages as low as 1 µV. |
| Digital Inputs: | 6 pulse counter/accumulator inputs |
| Terminal PCB: | provides input MOV protection for 16 analog or digital inputs, additional generic terminal strips provided for 18 additional wire terminations |
| Communications: | RS-232 9 pin male, (DTE). RJ11 jack also provided with spark-gap protection; for user-supplied telephone modem |

Network Operation

YESDAS-2 excels in both single user (i.e., one user both commands and retrieves data from the system) or multi-user environments by utilizing two levels of password protection. General users can call up and retrieve data under one password while system administrators can reprogram or alter data logger operation under a separate password. This capability allows you to share data among schedules.

YESDAS-2 232 cable to an internet-connected workstation running YESDAS Manager, providing truly worldwide data access via the web.

Each YESDAS-2 has a built-in, guaranteed unique, serial number that uniquely identifies it, and this ID is returned with each data dump. Large networks of geographically separate data loggers can be supported via an automatic polling from Unix workstations or via YESDAS Manager. Different data dump files are automatically uniquely named based on the instrument ID and the date the data was collected. Because it was designed to support large, complex networks, it can easily handle stand-alone tasks.
YESDAS-2 manages its memory to maximize data storage efficiency. With the PCMCIA option, it can store up to two Mbytes of sampled data. In remote locations without telephone lines, data can be retrieved by removing the PCMCIA card from a live, running YESDAS-2 system, installing an empty card.

Mechanical Interface Dimensions in inches (CM)

YESDAS-2 will automatically erase its internal RAM when an erased memory card is inserted, allowing nonstop data acquisition. Memory cards are available in one or two Mbyte sizes and contain a built-in lithium battery that retains data for up to 10 years. PCMCIA memory cards offer alternative to a dedicated telephone line connection to a YESDAS-2.
Satellite connectivity options are available via GOES/Meteosat; please contact us to discuss your network data acquisition needs.

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<tr>
<th>Manufacturer</th>
<th>Model</th>
<th>Description</th>
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<tr>
<td>RM Young</td>
<td>05103</td>
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<td>HMP45C-L</td>
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Certified Optional Sensors and Equipment