

**DICKSON**

# ES120/ES120A

## Electronic Signal Data Logger

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ES120

# Product Applications

The Dickson ES120 sets a new standard in accurate, easy-to-use, affordable PC based recording. The ES120 will allow simultaneous monitoring of multiple variables with one data logger. With little effort, pressure, air movement, flow, fluid level, electrical properties, moisture, gas concentrations and much more can be monitored. Due to its small size and rugged design, the ES120 can be placed just about anywhere!

The ES120 is ideal for researchers, building operators, test & equipment engineers and quality control personnel. DicksonWare™ makes reading recorded data on your PC easy! Importing data into a Word document, Excel spreadsheet or PowerPoint presentation is a snap.

# Product Features

- Simultaneous monitoring of multiple variables with one data logger
- Monitor pressure, air movement, flow, fluid level, electrical properties, moisture gas concentrations and much more
- 5 year battery life
- Stores 32,000 sample points (16,000 per channel)
- 2 user selectable channels

# Other Useful Features

- **Delayed Start:** Program how many Days, Hours and Minutes must expire before your unit begins logging.
- **Real Time Monitoring:** Monitor and graph your process as it happens and print and save from real time screen. (This feature should be used sparingly as it causes the battery to drain quicker)
- **Customize Graphed Data:** DicksonWare™ calculates Min, Max and Average of all data collected. Customize data by highlighting specific data points which will recalculate MIN, MAX and Average for highlighted information.
- **Export Data:** A snapshot of your graph or a real-time graph of points can be easily exported to other programs such as Excel™ or PowerPoint™.

**CLICK ON THE FEATURES BUTTON IN THE SOFTWARE FOR DETAILED INSTRUCTIONS ON HOW TO USE ABOVE FEATURES AND MORE.**

# Product Specifications

	ES120	ES120A
<b>Operating Range (unit only):</b>	-40 to +176°F (non-condensing)	-40 to +176°F (non-condensing)
<b>Input:</b>	0 to 5V, 0 to 20mA, 4 to 20mA, or 1 to 5V (user selectable)	0 to 15V
<b>Total Channels:</b>	2	2
<b>Input Connection:</b>	Screw Terminal Block	Screw Terminal Block
<b>Sample Interval:</b>	10 sec. to 24 hr. interval	10 sec. to 24 hr. interval
<b>Storage Capacity:</b>	32,000 div. by 2	32,000 div. by 2
<b>Resolution:</b>	0.1°F	0.1°F
<b>Dimensions:</b>	3.1" x 2.1" x 0.9" (79mm x 53mm x 23mm)	3.1" x 2.1" x 0.9" (79mm x 53mm x 23mm)
<b>Weight:</b>	2 oz (56.7 g)	2 oz (56.7 g)

# Operating Instructions

1. Install the DicksonWare™ Software.
2. Connect the cable (supplied with the software) to the logger and to a working serial port on your computer.

## ES120 Setup

- Ensure dip switch settings. Remove the screw on the back of the case and position the switch for each channel according to the type of signal being supplied, ON for 0 to 20mA Current signal and OFF for 0 to 5Vdc signal.
- Connect your 0 to 5Vdc and/or 0 to 20mA transmitter(s) using the channel polarity indicated on the front label.

## ES120A Setup

- Connect your 0 to 15Vdc source or transmitter(s) using channel polarity indicated on the front label. DO NOT CHANGE DIP-SWITCH SETTINGS FOR ES120A.

## Getting Started

1. Click the Setup button. When the setup window appears, all fields should be automatically filled in, this will confirm that DicksonWare™ has recognized the logger. Should all fields remain blank, refer to "No Communication" in the Trouble Shooting section of this manual.
2. Once DicksonWare™ recognizes the logger, select the channels tab. Press the adjust button next to the desired channel which will bring up a channel adjustment window with two categories, ENABLE and USER DEFINED. In the "Enable" section, the "Enable" box should be deselected. If a channel is not going to be used, this will allocate all storage capacity to the active channel. You may also choose to change the label for that channel to reflect the actual variable being measured such as Temperature, Pressure or Flow.

## Following Setups Are For ES120 Models Only

- In the "User Defined" section, set the MIN and MAX input signal being supplied by your transmitter, units should show mA or V depending on what type of signal that channel is setup to receive. Now set the MIN and MAX range that applies to the programmed input signal.
- Changing these parameters in the ES120A model will cause the logger to operate improperly.
- You may also want to type a variable in the units field that represents what is being measured such as F for Fahrenheit, PSI for pressure or gpm for gallons per minute. You may set the units for model ES120A as well.
- To start logging, press the Clear button. This will delete all data currently stored.
- The logger is now sampling and ready for use. The default sample interval is 1 minute. Verify that the indicator light is flashing every 10 seconds. You may choose to change Default settings for sample interval and start-date and time. When changing these settings, the logger will automatically go through the clear process to accept your changes.

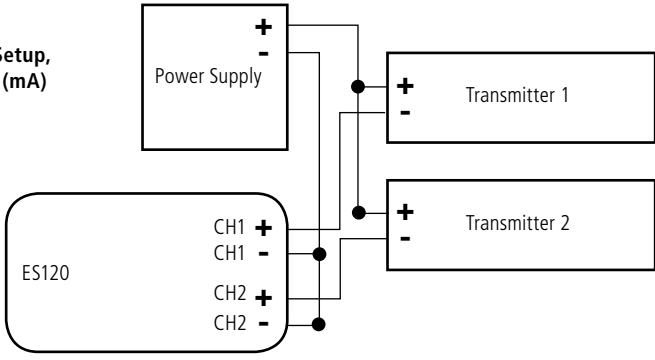
**NOTE:** To conserve battery life when storing unit, press the Setup button and select the shortest Sample Interval and Stop When Full in the Samples section.

# Transmitter / Sensor

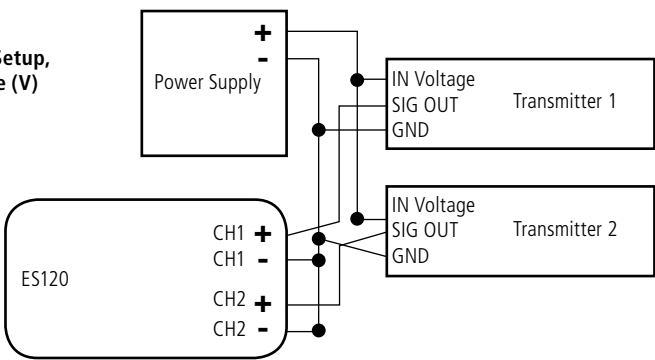
A powered transmitter is required to operate the ES120/ES120A. Any powered transmitter with a 4-20mA, 0-20mA, 0-5Vdc, 1-5Vdc or 0 to 15v (ES120A) output signal may be used. To connect a transmitter to the logger, locate the terminal block on the side of the logger. Connect the positive wire of the transmitter to the positive terminal and the negative wire of the transmitter to the negative terminal of the appropriate channel. Tighten screws in terminal block to hold in transmitter wires. Repeat steps with second transmitter.

## ES120

Typical Setup,  
Current (mA)

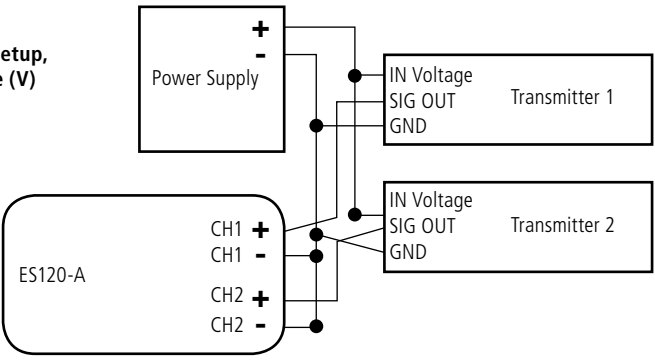


Typical Setup,  
Voltage (V)



## ES120A

Typical Setup,  
Voltage (V)



# DicksonWare™ Software Specifications

- Microsoft Windows® compatible
- Allows for simple viewing and zooming of logged data
- Easy set-up of Dickson Data Loggers including:
  - User selectable sample intervals from 10 seconds to 24 hours
  - Display temperature in °C or °F
  - Delayed logger start times
  - Logger data capacity can be set to wrap data or stop when full
  - Allow for real time monitoring and graphing.
  - Effortless exporting of data and graphs to other software
  - Data can be viewed in tabular (numeric/table) or graphical formats
  - Fast downloading of logged data - 30 seconds (typical) from full logger
  - Even shows battery power status for battery operated loggers

## Specifications:

- **Compatible With:** Microsoft Windows® 95, 98, 2000, NT & XP
- **PC Requirements:** PC with 386 MHz or better microprocessor, 4 M RAM, 1 free COM (serial) port, CD drive
- **Cable Type/Length:** 9 pin male D-shell to male 2.5mm stereo plug, 6' long
- **Computer Interface:** RS-232 COM (serial) port
- **DicksonWare™ Version Required (minimum):** See Specific Model for Version Requirement

## Accessories (for current pricing go to [www.dicksondata.com](http://www.dicksondata.com) or call 1-800-323-2448)

Software	Order #
DicksonWare™ Software and Serial Download Cable	A015
Cases	Order #
Locking Wall Mount Case	A715
Waterproof Pouch	A713
Other	Order #
Certificate of Validation	N520

# Frequently Asked Questions

**Sample Interval:** The Sample Interval determines how frequently the data logger will save a reading. Using DicksonWare™ Software, the user can set a Sample Interval ranging from 10 seconds to 24 hours in 10 second increments. A temperature logger with data storage of 32,512 set at a 10 second Sample Interval will record for 3.75 days, while the same logger set at a 1 minute Sample Interval will record for 22.5 days.

**Data Storage:** Data Storage is the number of Sample Points a data logger can hold. You will find models that range from 7,680 samples to 32,512. A temperature logger with Data Storage of 32,512 and a sample interval set at 30 seconds would record for 11.25 days, while a temperature logger with Data Storage of 7,680 and the same sample interval would record for only 2.6 days.

**Does it have to stay connected to a PC in order for it to work?** No. Unless you're viewing data in real-time you only connect the logger to a PC when you want to view / retrieve data.

**What happens when all the storage space is taken up? Do I have to throw it away?**

After you have downloaded the data, you simply "clear" the logger and it is ready to log more data.

**What happens if I leave it monitoring somewhere too long?** The Data Loggers have two user selectable modes, Stop and Wrap. In Stop mode, they will quit logging data when the memory is full. In Wrap mode, the Logger will begin to overwrite the oldest data in its memory.

**Where can I put them?** Depending on the Dickson model, just about anywhere. We have waterproof units, stainless steel models, units with probes, and units that handle extreme temperatures. Our wide selection of instruments should fit about any application.

**What is the biggest advantage of a Data Logger?** Its data is "logged", stored on a microchip inside the Data Logger. Data in electronic memory takes advantage of the power of a PC and software.

- \* Store the data as you would store any document on your PC.
- \* Retrieve archived data as easily as opening a file on your PC.
- \* Share the data as you would any PC file, email, copy and paste.
- \* Data can be imported into spreadsheet software and word processing documents.
- \* Easily import data from multiple data loggers onto a single graph.

**How are they mounted?** The smallest ones, about the size of a pager, can be wall-mounted with Velcro or simply set anywhere you need to monitor. The larger units have keyhole slots for wall mounting and can also stand on their own.

## Troubleshooting

For troubleshooting information, click [here](#) for the ES120 technical support page.

## Warranty

Dickson warrants that the products it sells will be free from defects in material and workmanship under normal use and service for a period of twelve months after delivery. In the event of a claim under this warranty, the product or part must be returned to the factory for repair or replacement (shipping pre-paid) with a Return Authorization Number (see Return Information above). It will be repaired at Dickson's option without charge. This warranty DOES NOT cover routine calibration, pen, chart and battery replacement. The foregoing warranty and remedy are exclusive and in lieu of all other warranties either expressed or implied. Dickson shall not be liable for consequential or incidental damages resulting from failure or malfunction of its products. Dickson makes no warranty for products not manufactured by it or for any products modified by buyer, or subject to misuse or neglect.

## Factory Service & Returns

Contact the factory (630-543-3747) for a Return Authorization (RA) Number before returning any instrument. The model number, serial number and a purchase order number will be requested before an RA number is issued.

- Carefully repack the instrument, label the outside of the box with the RA# and return the instrument (freight pre-paid) to Dickson.
- All instruments that do not have the RA# clearly marked on the outside of the box will be refused. When returning instruments for credit, please include all accessories in shipment.
- Calibration/Freight charges are non-refundable.

NOTE: Dickson shall not be liable for consequential or incidental damages resulting from failure or malfunction of its products.

- **Customer Satisfaction:** Dickson takes pride in providing you, the customer, with the highest quality instrumentation. We welcome the opportunity to help you in any way possible. Whether it be a question or a new idea in documentation, the Dickson Company would like to hear your response. Please call our Customer Service Department at 1-800-323-2448 or (630) 543-3747 (in Illinois).
- **Software Return Policy:** IMPORTANT-Read your Software License Agreement carefully before installing software. Dickson will accept returns for replacement of defective disks and CDs only.

## DICKSON

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