

Three-Channel Data Acquisition | Fundamentals of Data Acquisition

The screenshot displays an eLearning course page titled "Introduction to Data Acquisition". The page number is 12. The interface includes a navigation bar at the top with icons for back, forward, and search. On the left, there is a "Table of Contents" with a list of objectives and their corresponding page numbers. The main content area features a photograph of a digital chart recorder with a touchscreen interface showing a "Main Menu" with various icons. Below the photo is a caption: "Figure 6: Digital Chart Recorder Touch Screen". To the right of the photo is a diagram of the rear panel of a digital chart recorder, labeled "Figure 13: Rear of Digital Chart Recorder". The diagram shows various ports and components with labels: BODY, ELECTRICAL POWER CONNECTION (ANALOG AND DIGITAL), ANALOG INPUT TERMINATION POINT (OPTIONAL), ALARM DELAYS ON INPUTS (OPTIONAL), COMMUNICATION PORT (ETHERNET), ANALOG INPUT SLOT, ANALOG INPUT SUPPLY OUTPUT, PHYSICAL POWER CONNECTIONS (2 TO 20VDC TO 24VDC, 24VDC, 24VDC), REMAINING ELECTRONIC POWER, and LATCHING POWER (SHARED). Below the diagram is a detailed caption: "Figure 13: Rear of Digital Chart Recorder". The caption lists several key components and their functions:

- Body** - The body of the chart recorder is usually made of metal. It encloses and protects the internal electronics.
- Internal Electronics** - The internal electronics consist primarily of a microprocessor and other solid state components that allow the chart recorder to display the signal data in the format that the operator programs.
- Electrical Power Connections** - The power connections allow the chart recorder to be connected to the appropriate power source, in this case 100-240 VAC or 12-24 VDC (12-24 VDC).
- Connection Terminals** - Most digital chart recorders have a variety of standard and optional terminal blocks, as Figure 13 shows. Terminal blocks include analog inputs, alarm delays, and 24V power supply output.
- Communication Port** - Digital chart recorders can be equipped with some type of communication capability (e.g., Ethernet) that allows data transfer between a computer and the chart recorder. Most recorders include a communication port on the back.
- Earth Ground Terminal** - Digital chart recorders that have a metal chassis include an earth ground connection so the chassis can be connected to earth ground to eliminate shock hazards.

eLearning Course: E33302

Amatrol's Three-Channel Data Acquisition eLearning teaches the fundamentals of data acquisition. Data acquisition systems consist of equipment used to receive, record, and analyze process data. This course teaches how to use chart recorders to collect and display process data. This course also covers how to use computer software to view and manipulate the data.

Data Acquisition eLearning

What are the Four Types of Chart Recorders?

Four common types of chart recorders are vertical, circular, flatbed, and digital. Each is an electrical or electromechanical device that uses pens to create graphs of sensor output signals over time.

- **Vertical Chart Recorders** - Vertical chart recorders, also called strip chart recorders, consist of a roll of paper that passes under one or more pens. The recorder is oriented vertically, creating a graph from the bottom to the top of the paper.
- **Flatbed Chart Recorders** - Flatbed chart recorders are horizontal recorders that operate in a manner similar to a vertical chart recorder to create graphs of the sensor output. They typically have fewer than five channels.
- **Circular Chart Recorders** - Circular chart recorders use a single sheet of paper that passes under one or more electromechanical pens. The pens produce a circular graph of the input signal. Each revolution occurs over a specified amount of time.
- **Digital Chart Recorders** - Digital chart recorders, also called paperless chart recorders, are the latest advances in the recorder industry. Instead of using electromechanical pens to create a graph of the input on paper, digital chart recorders create graphs on a digital display screen.

Three-Channel Data Acquisition eLearning Allows Online Access to Curriculum

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Additional Info

Requires:

- Computer (see [Computer Requirements](#))

Options:

- Three-Channel Data Acquisition Learning System ([T5553-R1A](#))
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