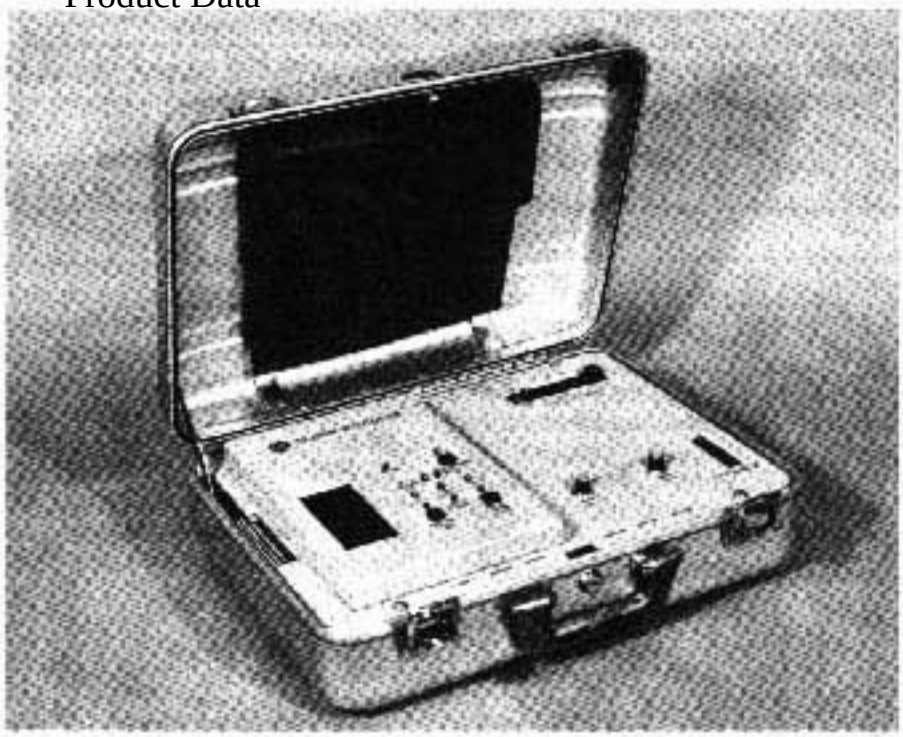
Allen-Bradley
Data Cartridge Recorder

(Cat. No. 1770-SB)

Product Data



Introduction

The Data Cartridge Recorder (Cat. No. 1770-SB) is a portable, highspeed recording device that provides a highly reliable means of program storage and retrieval. It is used to record (dump), load and verify the Processor's data table, user program and messages using magnetic tape. Compatible with all Allen-Bradley programmable controllers and Industrial Terminals, the Data Cartridge Recorder is shipped with:

- an AC power cord
- a 230V fuse kit
- a Mini Data Cartridge (Cat. No.
- a User's Manual (Publication 1770-806)
- a Product Data Sheet (Publication 1770-912)

Additional data cartridges can be ordered to maintain a library of programs for production requirements that require quick changes.

Features

The Data Cartridge Recorder, although portable and lightweight, is designed for most industrial environments. Highlighted below, some of the features include:

- Manual or remote operation
- Selectable baud rate
- Single or continuous track selection
- Large storage capacity – one 144K word program or two 72K word programs
- Fixed head alignment to assure high data reliability
- 115V AC or 230V AC operation
- Continuous error checking for high data reliability (CRC checking)
- Automatic tape tension adjustment
- Full status indication
- Minimal maintenance
- Record protect feature

Description

The Data Cartridge Recorder can be connected to any of the Industrial Terminals or the PLC Processor using one of two cables. These cables connect to the 25-pin RS-232-C port on the Recorder's control panel and are described in Table 1.

The Data Cartridge Recorder can be operated either manually or remotely depending on the device connected. It is operated manually using the pushbuttons on the Recorder's control panel and the signals received from the connected device. Remote operation of the Data Cartridge Recorder is performed solely from the keyboard of the Industrial Terminal (Cat. No.1770-T3 or -T4). Whether manual or remote operation is used, the indicators on the control panel are used to verify the operation being performed and related operating conditions. For detailed operating instructions, refer to the Data Cartridge Recorder User's Manual.

During the record, load and verify operations, the data, formatted in 8-bit serial, is buffered and continuously checked for errors to assure it is accurate. The direction in which the data is traveling and any errors that are detected are indicated by the DATA IN, DATA OUT and DATA ERROR indicators (Figure 1). In addition to error checking, the data can be transferred at various baud rates as selected by the baud rate switch (Figure 1). The baud rate selected will depend on the device that is connected. For proper operation, the baud rate on the control panel must match the baud rate of the connected device. When a Mini Data Cartridge is installed, the Data Cartridge Recorder automatically adjusts the tape tension. It does this by automatically fast-forwarding and rewinding the tape when the tape is installed with power applied.

The data is stored on a mini Data Cartridge (Figure 2), which consists of 140 feet of computer grade magnetic tape. The tape has two tracks and can store up to 72K word of memory on one track, or a total of 144k words. This means either one program up to 144K word long or two programs, each up to 72k words long, can be stored on a single data cartridge.

The track select switch on the Recorder's control panel (Figure 1) is used to select track 1, track 2 or continuous for the recording, loading and verifying operations. The "continuous" setting starts the operation with track 1, rewinds the tape at the end of track 1, and continues the operation at the beginning of track 2. Thus, the continuous position is used for programs that are longer than 72K words. Two indicators on the control panel – END OF TRACK and BOTH TRACKS USED – are used to indicate when the end of a track is reached and when the program is continued on track 2.

Table 1
Data Cartridge Recorder Cables

CABLE	CAT. NO	USE
Cassette Recorder Interconnect Cable	1774-TD	For use with PLC Processors only. Connects the Data Cartridge Recorder directly to the Program Panel Interface Module in the PLC Processor chassis.
Digital Cassette Recorder Cable	1772-TH	For use with PLC-2 Family, PLC-3 Processors and 7100 CNC. Connects the Data Cartridge Recorder to Channel C of the Industrial Terminal.

Figure 1
Data Cartridge Recorder Control Panel

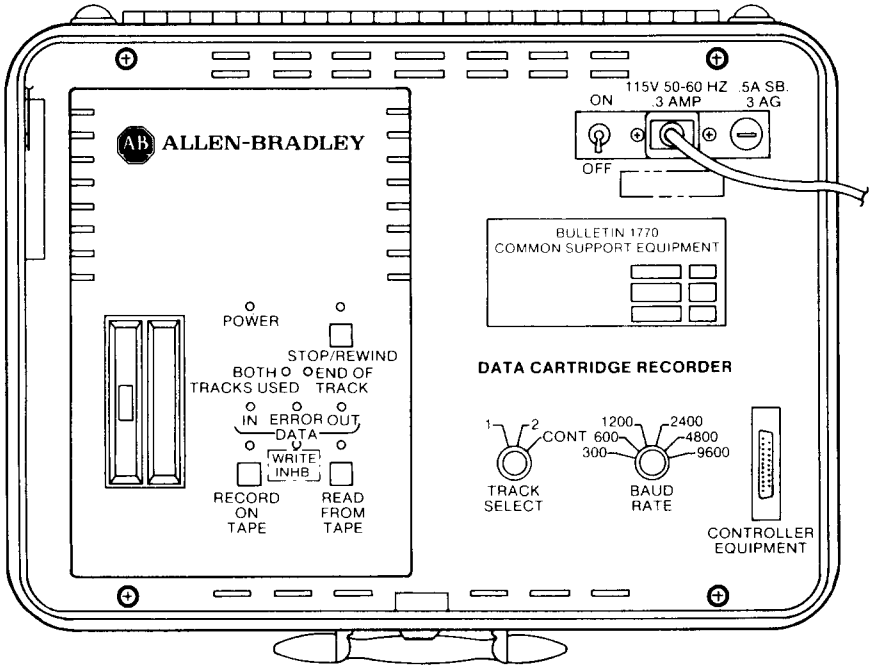
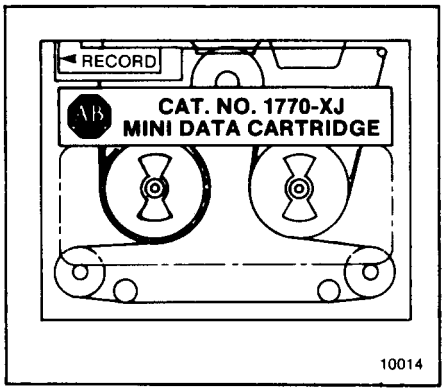


Figure 2
Mini Data Cartridge



Programs that are recorded on tape can be protected from being inadvertently recorded over by using the record protect feature on the Mini Data Cartridge. This is simply a sliding plastic tab that is positioned either to enable or inhibit recording on tape. The WRITE INHIBIT indicator on the Recorder's control panel illuminates when the record tab is in the record protect position.

Once programs are recorded and verified on tape, the record tab should be moved to the record protect position. The cartridges should also be identified and described on the labels that are shipped with them. Typical information might include:

- Program name
- Program size in K words
- Data table size
- Track used
- Date

Compatibility

The Data Cartridge Recorder can be used with all programmable controllers and Industrial Terminals, as well as the Series 7100 CNC. The baud rate and manual/remote operation of the Recorder will depend on the connected device.

With a 1770-T4 Industrial Terminal, the Recorder's baud rate switch can be positioned at 1200 or 9600. With a PLC Processor, the 1774-TD Cassette Recorder Interconnect Cable is configured for 1200 baud. Thus, the Recorder's baud rate switch must be set to 1200. For all other Industrial Terminals (1770-T1, T2 or T3), the default baud rate is 1200. Thus, the Recorder's baud rate switch must be set to 1200.

Manual operation is possible with all devices except the 1770-T4 Industrial Terminal, whereas remote operation is possible only with a 1770-T3 or -T4 Industrial Terminal.

The Data Cartridge Recorder can be used in place of the Digital Cassette Recorder (Cat. No. 1770SA) operating it manually at 1200 baud. The Cassette tapes can be copied onto the data cartridges by directly connecting the two Recorders with the 1772-TH Digital Cassette Recorder Cable.

Product Data
Data Cartridge Recorder
(Cat. No. 1770-SB)

Specifications

Operating Line Voltage
115V or 230V AC ± 10%
User selectable

Operating Line Frequency
50/60 Hz (47-63 Hz)

Size
(H x D x W) 6 x 14 x 18 (inches)
15.3 x 35.6 x 45.8 (cm)

Weight
16 lbs (7.2 Kg)

Temperature Range
0°C to 45°C operating
-40°C to 70°C storage

Relative Humidity Range
20% to 80% operating
5% to 95% storage
noncondensing

Baud Rate
300 1200
4800 600
2400 9600
User Selectable

Operating Modes
Remote or Manual

Data Format
8-bit binary with one
start bit and one stop bit

Transmission Mode
asynchronous, serial

I/O Interface
EIA RS-232C configured
as a Data Terminal port

Recording Head
Dual track, single read after
write head

Fuse
1/2 amp 115V AC operation
1/4 amp 230V AC operation

Cartridge Tape
2 tracks. 140 ft. computer grade
tape certified at 1600 flux
changes per inch (FCI)

Storage Capacity
72K words of memory per track
144K words total capacity

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