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RTO2
The Low-Cost Alphanumeric Terminal

The RT02 Alphanumeric Terminal* is a low-cost data entry terminal (approximately $1300) offering both local and remote operation and featuring Teletype** and EIA serial line compatibility. It can receive, store, and display 32 alphanumeric characters on a single-line, gas-discharge type readout panel. Character repertoire is a modified 64-ASCII set.

Data is entered via a 16-pad keyboard which includes a shift key to enable entry of a full 30 characters that the monitoring computer may interpret as either numeric data or control functions.

Interfacing to a computer is accomplished via a standard full duplex 4-wire data communications Teletype interface such as those available for the PDP-8 and -11 families, DECsystem-10, PDP-12, -15 and -16 computers. Modem interface signals corresponding to EIA RS-232-C specifications are also provided.

FEATURES

Versatility—Terminal usage may be defined entirely by software; that is, the application determines the significance of each character. For example:

A key representing "account number" in a banking application could represent "cost per part" in a manufacturing monitoring application.

Simplicity—The conversational-type response to the operator and simple 16-pad keyboard contribute to ease of operation by eliminating the need for the operator to interpret complex code numbers and symbols.

Portability—The RT02 is compact and lightweight (approximately 14 pounds) so it can be easily moved from one location to another.

Reliability—An all solid-state design guarantees the user a terminal with long, trouble-free operation.

Readability—The bright red, 0.2" high, single-line readout is easily visible and offers greater readability while minimizing the possibility of reading errors. The need for an operator to manipulate a cursor or other such line-determining device is eliminated. Maximum security is assured because only one line of information is displayed at any instant.

Compatibility—The RT02 is hardware compatible with all of Digital's computers and comprehensive line of data communications equipment.

Maintenance

The elimination of electromechanical parts, paper and ribbon replacements makes routine maintenance unnecessary.

SPECIFICATIONS

General

Line Voltage:	115 Vac, 230 Vac; 47-63 Hz
Power:	50 W maximum
Size:	14⅜"w x 6¼"h x 15⅞"d
Weight:	14 lbs.
Temperature:	0° to 45° C

Alphanumeric Display

Number of Character Positions:	32
Character Set:	64-character modified ASCII
Character Height:	0.2"
Character Aspect Ratio:	5 x 7
Color:	Red
Viewing Angle:	120°

Display Control Functions

Clear Display
Blank Display
Unblank Display

Keyboard

Number of Keys:	16
Character Set:	ASCII
Number of Characters:	30 (with shift key)
Keyboard Control:	N-Key Rollover
Key Construction:	Environmentally sealed

Data Input/Output

Levels: TTY 20mA Isolated Current Loop
EIA RS-232-C

Transmit/Receive Rates:

110/110 baud	TTY+EIA
150/150 baud	TTY+EIA
300/300 baud	TTY+EIA
1200/1200 baud	EIA
110/1200 baud	EIA
150/1200 baud	EIA

Character Format: 8 Level Asynchronous Serial ASCII
2 Stop Bits (110 baud)
1 Stop Bit (150, 300, 1200 baud)
Even Parity

Input/Output Connectors: 8-Pin MATE-N-LOK*** (TTY)
CINCH DB 25P (EIA)

*UL and NFPA Listed
**Trademark of Teletype Corporation
***Trademark of AMP Incorporated

The RT02 provides easy, low-cost access to total information in a computer. It offers an ideal communications link in such typical applications as...

- Stockroom Inventory Control • Management Information
- Production Line Monitoring • Quality Control Monitoring • Security Systems
- Credit Checking • Banking Transactions

...or any other situation that requires interactive alphanumeric communication between a remote operator and the central data processor.

The simplicity of the RT02 enables uncomplicated data entry by eliminating the need for the operator to interpret numerically coded instructions.

The following application examples illustrate the versatility and ease of implementation of the RT02 terminal.

MEDICAL TEST LAB DATA ENTRY

The demand for additional test services in clinical laboratories doubles every five to seven years. One of the major bottlenecks in this area is the accessing, recording, and reporting of data. The RT02 is ideally suited to reducing the workload normally associated with these types of activities.

The patient's identification is entered and verified on the display. The operator is then informed of the range of tests required by that patient and prompted in sequence on each individual test within that range. As each test is announced, the operator enters the appropriate results. The data is examined by the central monitor and compared with a predetermined "healthy" range. The terminal then indicates either full or conditional acceptance of the data and whether additional activity is required on the part of the operator.

The single-line alphanumeric display has the facility of indicating a limitless number of instructions to the operator with none of the fixed constraints of an "indicator board"; and the addition of new tests and parameters presents no display problems. The lightweight, compact styling provides easy mounting on desk tops, tables, benches, etc.; and noiseless operation and ease of visibility contribute greatly to reducing operator fatigue.

AUTOMATED WAREHOUSING

Automated stacker cranes have alleviated many warehousing problems that stem from manual labor—breakage due to careless handling, misplaced merchandise, loss of time due to sick days, etc.

Oftentimes small computers are used to control stacker cranes, directing the move of pallets from different bins. The computer is given a control program in advance—pickup and delivery requests can be entered into the computer through an RT02. The attendant at the control station pushes a key to indicate whether the operation is to be a pickup or delivery, then he types in the respective level, row, and bin to which the crane should move.

The simplicity of operation is the key to the success of the RT02 here. The operator is relieved of the task of interpreting coded instructions, and the simple keyboard reduces the possibility of his introducing errors into the system.

REMOTE FUEL LOADING

Drivers of large oil and gasoline trucks refuel at strategically located tank farms throughout the country.

The driver can be permitted access to the tank farm by entering his identification on an RT02. The response from the terminal will implement his access and indicate which refueling tank to use. Another RT02 at the tank will again accept the driver's ID, fuel status, truck number, etc., and issue the following typical instructions and information:

- *Fuel Amount*
- *Destinations*
- *Weather and Traffic Conditions*
- *Maintenance Status of the Rig*
- *Number of Hours Worked/Overtime Hours*
- *Personal Messages, etc.*

Utilization of an RT02 alphanumeric terminal in this application will result in more efficient use of equipment and the driver's time while enabling better servicing of fuel vendors.

PRODUCTION CONTROL

The time required to report, locate and identify trouble spots in all areas of a production process is extensive. RT02 terminals installed at key points in a manufacturing plant can reduce the amount of time.

Location, time, and type of outage can be reported immediately to the central monitor; instructions on the most appropriate course of action can be immediately relayed to the operator in a conversational mode. The operator is not required to interpret complex numeric codes; he merely translates the displayed instruction into the necessary action.

The RT02 institutes an effective, low-cost interactive communication system between the production line and the production monitor. The direct result is reduced downtime through more efficient utilization of the man/machine interface. (Because of its size, the terminal can be moved to the most convenient operator location at any given time.)

The 16-pad keyboard reduces the possibility of operator error, as it offers the facility of transmitting only numerics and special codes which are interpreted at the central monitor end of the system.

PLANT SECURITY

A computerized security system offers many organizations the best possible solution towards preventing vandalism, theft and unauthorized admission. A typical system might consist of a centrally located computer and, at each plant entrance, a data terminal and additional employee/visitor identifying device.

Employee data can be entered into a computer by the personnel department. Updated information can be transmitted via the RT02 by inputting the badge number of an employee and stating whether he is authorized admission or not.

By utilizing a badge reader for employee identification and an RT02 for verification of employees without badges and for admitting visitors, a guard need only enter the badge number or visitor's number and control character. The response from the RT02 would indicate an approval or disapproval of the employee and admission of the visitor.

The RT02 combined with a badge reader and a central computer provides a simple yet very effective way of denying access to unauthorized individuals.

DEPARTMENT STORE CREDIT CHECKING

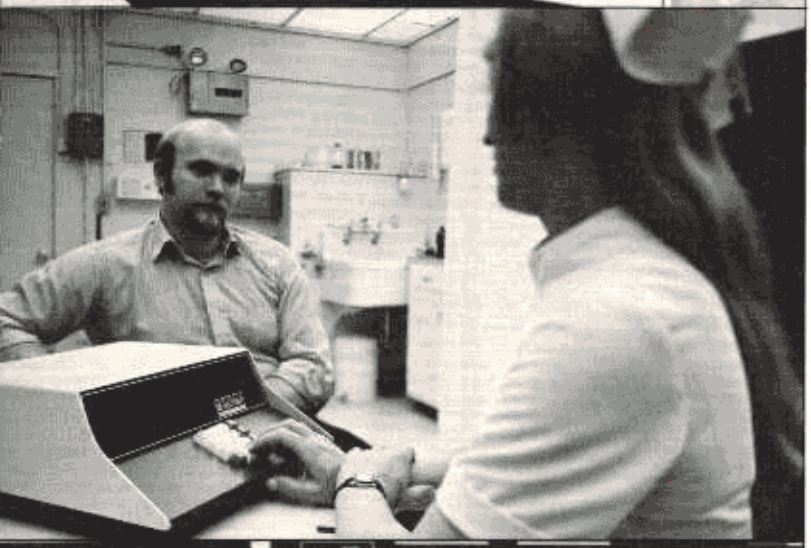
With the increased acceptance of credit cards by department stores, credit checking has become a significant part of operations. The popular current procedure for the sales clerk, upon being presented with a credit card for payment, is to place a telephone call to a central credit checking bureau. The operator there interrogates the computer on the current credit status of the customer, receives the information on some sort of CRT monitor and relays it back by phone to the waiting clerk—a cumbersome and time-consuming procedure.

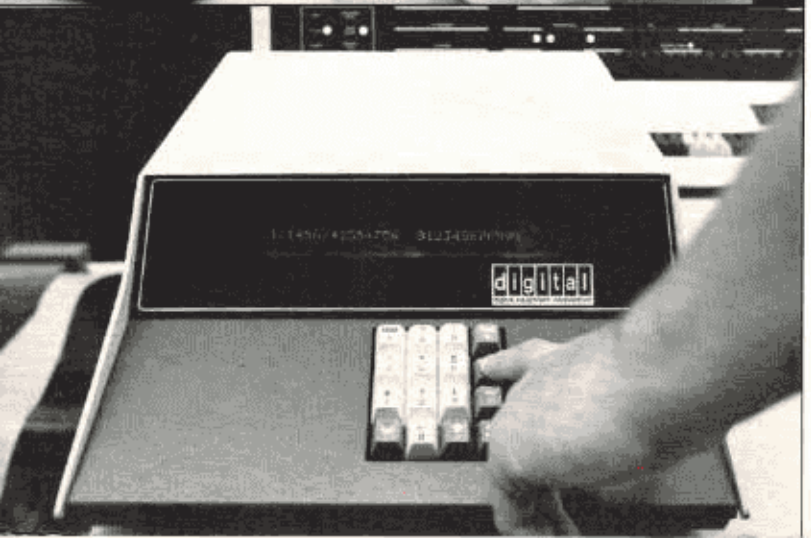
An RT02 terminal in the store will greatly simplify this procedure. The credit card number together with an identifying store code symbol is transmitted directly to the central on-line computer. Credit status is then displayed on the terminal. Other pertinent data may also be displayed at the discretion of the program previously established by the store — for example, status of a customer's bill, information on chronic credit card offenders, stolen cards, etc. The clerk may even be advised as to proper procedures upon encountering unusual situations.

The on-line interactive capability of the RT02 represents a major savings in time and operating cost to the store.

The RT02 fills the gap in price, performance, and usage between full-scale video displays and electromechanical, hard-copy devices.

For further information on how this terminal can implement your display terminal needs, contact the Digital Equipment Logic Products Group, or your local Digital Sales Office. Locations are listed on the back.





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DIGITAL EQUIPMENT CORPORATION
LOGIC PRODUCTS GROUP

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