

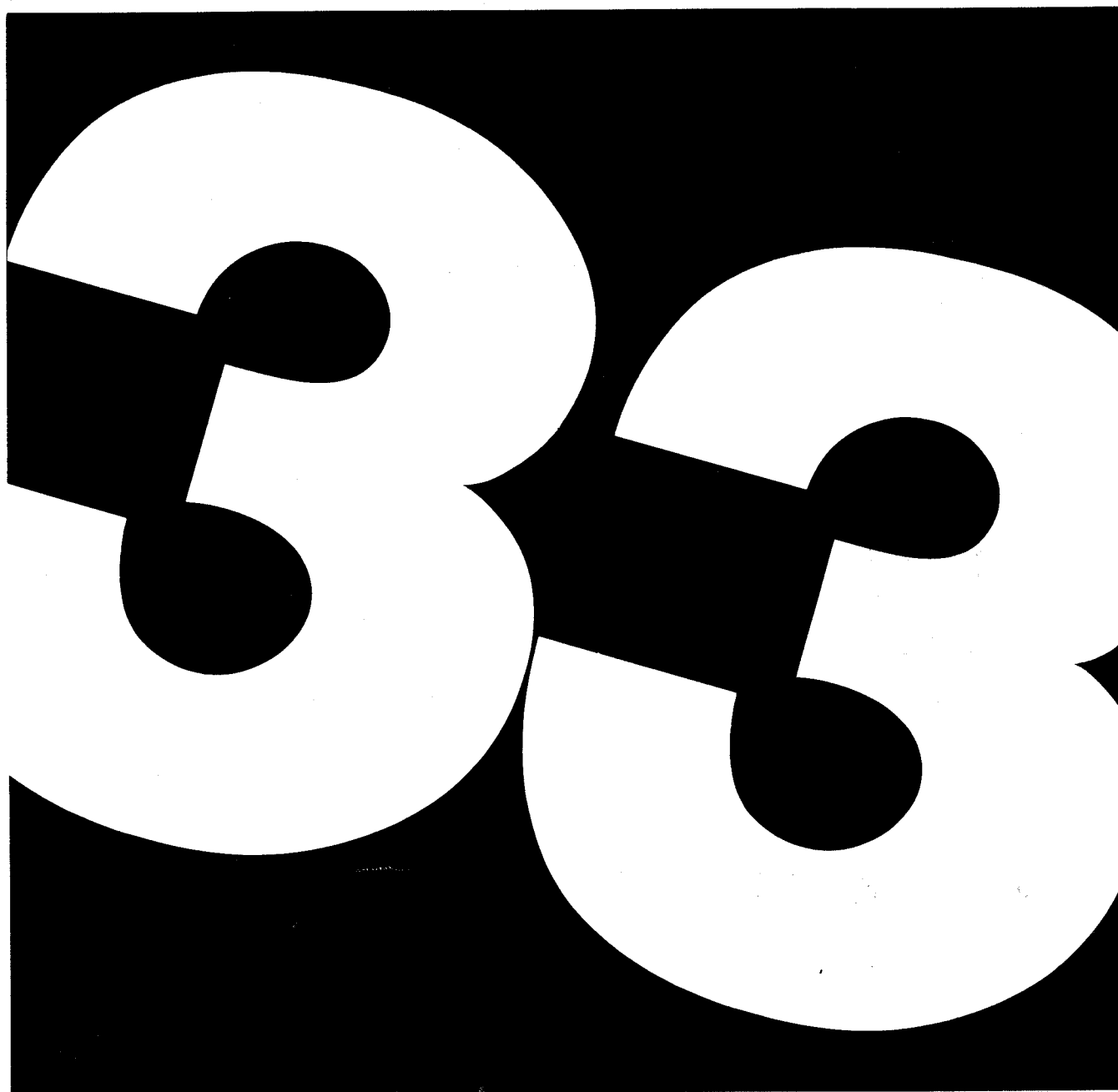


Geveke
Electronics and Automation
International

Offices in:
Amsterdam
Brussels
Hamburg
Paris



catalog teletype model 33



reprinted by Geveke

33 DATA TERMINALS

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INTRODUCTION

This catalog describes the most popular data terminals on line today: the TELETYPE® model 33. It's an economical, standard-duty line. One that has found wide acceptance across the data communications spectrum from simple data exchange to complex computer input/output applications.

Model 33 terminals are extremely simple to operate and maintain. They feature a keyboard similar to that of a typewriter. Operation can be easily mastered by an average typist.

A keyboard-typewheel arrangement meeting the latest ASCII* standard makes it easy for the 33 to communicate with computers. And certain options can be "customer activated" if your system requirements change.

Terminals are available with either dc current interface or integrated modem. The modem permits connection to voice grade communication networks and has facilities for manual-originate and either manual or automatic-answer. Its solid state technology assures long, trouble-free life. Total integration lowers costs by eliminating component duplication and additional installation charges.

The catalog describes various terminal configurations and features, provides technical facts to help you integrate the 33's into your system, and includes selection guides at the end to enable you to pin-point the particular terminal that fits your particular requirements.

Look it over. We think you'll agree. On a price/performance basis, you'll find no better buy than the 33.

* ASCII — American National Standard Code for Information Interchange

DESCRIPTION

LOW COST, STANDARD DUTY LINE

The model 33 is a low-cost, standard duty line of data terminals that provide facilities for entering, transmitting, receiving and recording data in communication systems. Available configurations feature various combinations of keyboard data entry, printed page copy and paper tape facilities.

Terminals in the 33 line are offered with 50 or 60 Hz motors. Can use inexpensive teletypewriter paper (friction feed) or accommodate multiple-copy business forms (sprocket feed). Operate at 10 characters per second (110 Baud). Feature four-row keyboards and utilize ASCII code. Offer a choice of three typewheel-keytop combinations. Generate alphas, numerics and many special control codes in even parity. And provide answer-back on most configurations. Transmission mode may be half or full duplex. Interface may be dc. current which is convertible to E. I. A. RS-232-C by a modification kit. Or a modem with facilities for manual originate and either manual- or automatic-answer. All 60 Hz terminals are UL and CSA listed, and all 50 Hz terminals are CSA listed.

BASIC CONFIGURATIONS

33 ASR

Automatic Send-Receive Terminal

Provides keyboard data entry, printed page copy and paper tape facilities. You can transmit data manually by keyboard or automatically by punched tape and simultaneously print local page copy for visual reference with or without

punching tape. Or punch tape off line by keyboard or tape reader with local page copy. Terminal receives data as printed page copy with or without punching tape. Tape sending and receiving can be manually or automatically controlled.

33 KSR

Keyboard Send-Receive Terminal

Provides keyboard data entry and printed page copy. Transmit data manually by keyboard and print local page copy. Terminal receives data as printed page copy.

33 RO

Receive-Only Terminal

Receives data as printed page copy. Available with or without answer-back which enables terminal to transmit its identification.

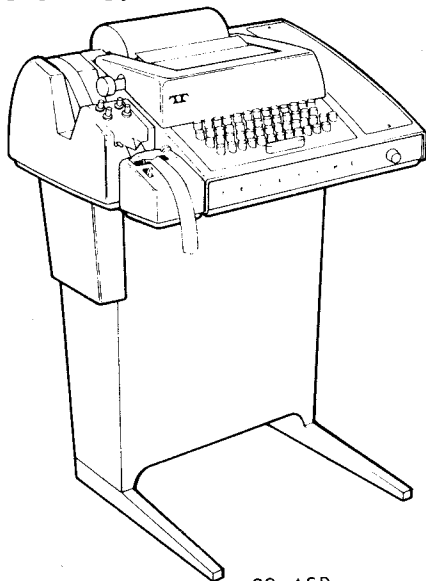
HALF OR FULL DUPLEX

All configurations have the option of half or full duplex. In half duplex option, the terminal can either send or receive, but not both at the same time. In full duplex option, it can send (eg, by keyboard or paper tape) and receive (eg, on page copy or punched tape) simultaneously.

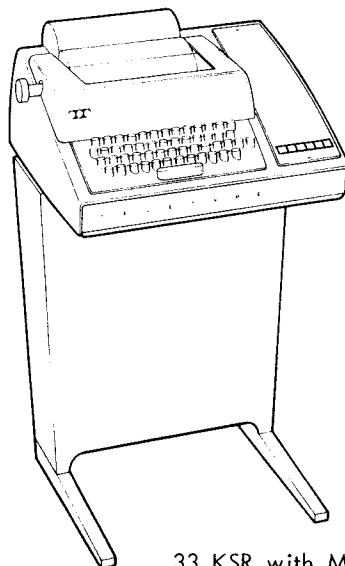
This option is a matter of a simple wiring change on terminals with 20 or 60 ma. dc. current interface. Terminals equipped with a modem are even easier; just push the terminal control button marked "FDX" (see page 11) and you are in full duplex.

ADDITIONAL OPTIONS

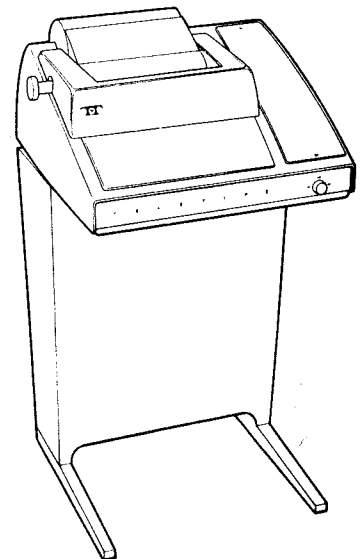
Accessories, features and configurations other than those covered in this catalog are available. Accessories include various paper and tape



33 ASR



33 KSR with Modem



33 RO

33 DATA TERMINALS

handling devices and a motor control mechanism that will turn the terminal motors on at the receipt of a line signal. You can add the 4210 magnetic tape terminal to your 33 and increase on-line speed to 240 cps. Add TELETYPE parity error detectors to improve data accuracy. 33's with Teletype station controllers can be used in selective calling systems. Our model 32 line offers the same performance, flexibility and economy as the 33 while using the five-level Baudot code. And our other low-cost line, the model 38, provides a wide platen and two-color, upper and lower-case printing. We invite you to contact Teletype Corporation for additional information (see back cover).

PAGE COPY

PRINTING

The model 33 is an impact printer which uses a cylindrical typewheel to produce page copy.

TYPE OF PAPER FEED

Model 33 terminals are available with either sprocket (pin) or friction paper feed. Your choice will depend on whether your system requires pre-printed business forms or plain paper.

Sprocket Feed

If your system requires business forms, you should choose a sprocket feed terminal. Holes along the edge of the form engage pins on the printer platen to move the form and maintain positive alignment. To bring a new form into position depress the CTRL (control) key and then the FF (form feed) key. A standard form (11" long) or a half-size sheet (5-1/2") can be handled. Other lengths are available as special options.

THIS IS A SAMPLE OF MODEL 33 PAGE COPY:
THERE ARE MANY BENEFITS THAT TELETYPE
PRINTED COMMUNICATIONS--BENEFITS THAT
IMPROVED AND MORE PROFITABLE BUSINESS

(Size slightly reduced)

Friction Feed

If only plain paper is required in your system, choose a friction feed terminal. These terminals use pressure from the platen and rollers to move the paper after each line feed code.

Paper comes in continuous 400-foot rolls so there is virtually no restriction on the length of copy which can be printed.

CHARACTER SETS

Typewheels have a maximum of 63 printing characters plus the non-printing graphic "space". Typewheels and keytops come in "matched sets". Page 6 shows the three combinations being offered in this catalog. The typewheel character set (the graphics you will see printed on your page copy) is shown immediately above its associated keytop arrangement.

Note the choice of arrangements with a slash zero or a slash alpha "O" and the latest ASCII arrangement (Typewheel TV and Keytop DSK) with a distinct character difference between the zero and alpha "O".

CHARACTER AND LINE SPACING

Terminals are factory adjusted for a 72-character line, have 10-to-the-inch horizontal spacing. Line spacing is adjustable to single or double line (6 or 3 lines to the vertical inch).

COPIES

Friction feed units: 1 original and 1 carbon copy

Sprocket feed units: 1 original and 2 carbon copies

FUNCTION BOX

A function box in the model 33 performs non-printing actions such as carriage return, line feed, space etc. It can be arranged to perform certain additional functions such as contact openings or closures to control peripheral equipment.

PAPER ALARM

The paper supply is continually monitored by a low paper indicator which is activated when approximately 25 feet of paper remains on a roll (friction feed) or the end of a series of continuous forms is reached (sprocket feed).

For terminals equipped with current interface, the indicator furnishes a set of "dry" contacts which may be used to turn on an audible or visual alarm which is customer supplied and installed.

If your terminal has a TELETYPE modem, the reaction to an alarm condition is indicated visually by the "CLEAR ALARM" control button being lighted (see page 11).

SIGNAL BELL

As you are typing, the approach of the right hand margin is indicated twice. The initial warning occurs approximately 10 characters from the end; next the end-of-line (E.O.L.) bell rings on the 71st character position indicating only one character remains. The bell also responds to the on line control code BEL (CTRL, G).

AUTOMATIC CARRIAGE RETURN AND LINE FEED

You can activate this option by simply removing a clip (instructions furnished) on the terminal. When activated, completion of the 72nd character causes the automatic return of the carriage to the left hand margin and brings a new line into position.

PAPER HANDLING OPTIONS

An electrically operated paper winder can be provided (LPW 300 HF) to re-roll printed data, when it is not necessary to separate each message as received.

A fan-fold form supply box (183859) is available which provides convenient form storage in its base. Shelf on top can be used to store forms temporarily after processing.

Refer to TELETYPE Paper and Tape Handling Catalog for these and other accessories.

KEYBOARDS

ARRANGEMENTS

The model 33 is available with any of the three typewheel-keytop configurations shown on page 6. Typewheel TV and Keytop DSK is the configuration for latest ASCII standard for data communications. Keytops graphically show control codes.

PRINTING AND NON-PRINTING CHARACTERS

The 33 keyboard generates both printing and non-printing characters, i.e. in some cases a code is transmitted but printing does not occur. It's easy to tell one from the other. Refer to the typewheel layout above the keyboard. Only those characters shown will print.

Lower keytop character (unshift row on layout)

Characters visible on the lower half of keytops are printed when the keyboard is in the unshifted state; just depress the key.

Upper keytop character (shift row on layout)

Those graphics printed in the shift state are obtained by holding the SHIFT key depressed and then operating the associated character key.

Control Characters (Non-Printing)

Neither printing or spacing occur when control characters are selected; an electrical signal is generated which results in:

1. Communication Controls (eg, ACK, ENQ)
2. Format Effectors (eg, LF, VT)
3. Device Controls (eg, DC1, DC2)
4. Information Separators (eg, FS, GS)

These may be identified by the standard ASCII designation in the upper half of the keytop.

To generate most control characters, hold the CTRL key depressed while operating the associated key once for each character desired.

Control-Shift Characters

The following keyboard generated control characters are obtained by holding both the CTRL and SHIFT key depressed while operating the specified key once for each character desired:

NUL...Shift, CTRL-P	GS...Shift, CTRL-M
ESC... Shift, CTRL-K	RS...Shift, CTRL-N
FS..... Shift, CTRL-L	US...Shift, CTRL-O

33 DATA TERMINALS

POSITION TV Typewheel Character Set

UNSHIFT A B C D E F G H I J K L M N O P Q R S T U V W X Y Z 1 2 3 4 5 6 7 8 9 0 / . - , ; :

SHIFT [\] ^ - @ ! " # \$ % & ' () ? > = < + *

TYPEWHEEL TV AND KEYTOP DSK

POSITION ME Typewheel Character Set

UNSHIFT A B C D E F G H I J K L M N O P Q R S T U V W X Y Z 1 2 3 4 5 6 7 8 9 Ø / . - , ; :

SHIFT [\] ↑ ← @ ! " # \$ % & ' () ? > = < + *

TYPEWHEEL ME AND KEYTOP DSL

POSITION NU Typewheel Character Set

UNSHIFT A B C D E F G H I J K L M N Ø P Q R S T U V W X Y Z 1 2 3 4 5 6 7 8 9 0 / . - , ; :

SHIFT [\] ↑ ← @ ! " # \$ % & ' () ? > = < + *

TYPEWHEEL NU AND KEYTOP DSM

Fold Over Printing

When model 33 terminals receive the ASCII codes for lower-case characters, they print the upper case equivalents. See "Technical Facts," page 13.

KEY INTERLOCK

The keyboard is designed to prohibit action of two keys being depressed simultaneously. When one key reaches a certain point in the down-stroke, all other keys are locked out until the depressed key returns to the unoperated position.

NON-REPEAT FEATURE

Only one character can be generated per key-stroke, unless the repeat key is used.

REPEAT KEY

The repeat key makes it possible to repeat a series of any character desired. By depressing and holding the repeat key, and then a character key, the character will be generated continuously until the repeat key is released.

PARITY

All 33 terminals have even parity keyboards. Code combinations are generated in an even number of marking bits over the sum of eight bits. Through a simple wiring change, you can activate the 8th bit for always marking or spacing for keyboard generated signals only.

END OF LINE FORMAT

At the end of each line of copy you should insert the three character sequence RETURN, LINE FEED, DELETE. Following this format you are assured that the printing mechanism will have sufficient time to completely return to the left hand margin before the first character of the next line is printed.

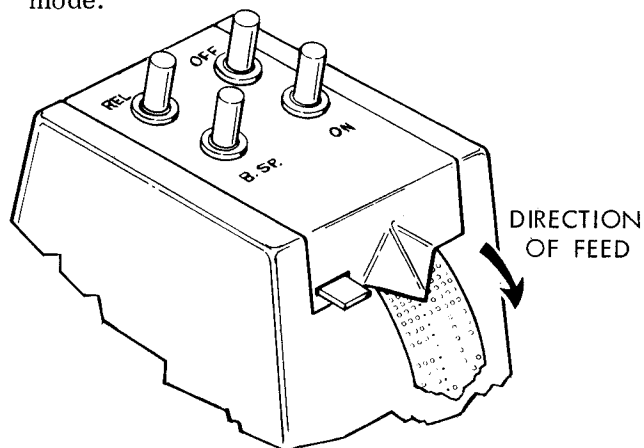
PAPER TAPE FACILITIES

BENEFITS

A paper tape punch and paper tape reader are an integral part of Teletype model 33 automatic send-receive equipment. These devices offer a number of time and labor saving benefits as well as adding greater flexibility and accuracy to your data communication system.

PAPER TAPE PUNCH

A customer-activated option provides a choice of fully automatic or manual punch operation. Terminals are shipped with "manual" punch ready to use. By removing a clip (instructions included) you can activate the "automatic" punch mode.



MODEL 33 PAPER TAPE PUNCH

Manual Operation

Four push buttons on the punch give the operator complete control over punch operation:

- ON -- Activates punch. Permits characters received by the printer to be punched intape.
- OFF -- Deactivates punch. Prohibits punching.
- B. SP.-- Primarily used for tape correction. Each time button is depressed, tape moves in reverse direction one character space.
- REL -- Tape release button. When fully depressed, allows tape to be pulled manually through the punch. Can be operated in on or off condition.

Automatic Operation

NOTE: The manual controls are still operable when the "automatic" option has been activated. You always have manual control of the punch.

When using the "automatic" option, the punch will respond to the receipt of ASCII control codes as follows:

- DC2 or TAPE -- Turns the punch on
- DC4 or TAPE -- Turns the punch off

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A remote station sending the DC2 code can turn the punch of the receiving station on without an operator being present. Data then can be received. The sending station turns the receiving station's punch off at the end of the transmission using the DC4 code.

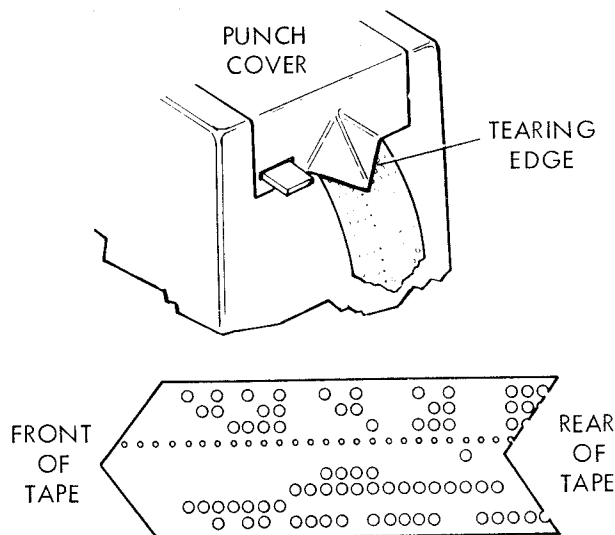
NOTE: The DC4 code will appear in the punched tape.

Error Correction

Correcting paper tape couldn't be easier. Two buttons do the job. The back space button is used to position the errored character under the punching head. It backs tape up one character at a time. When error is correctly positioned, the DELETE or RUBOUT key on the keyboard is used to delete it and all following characters. The correct characters can then be punched. When a tape reader senses delete characters, no printing or spacing occurs. Page copy will be correct with proper format.

Tape Removal

Tape that has passed through the punch is removed by pulling up against the plastic "V" shaped device on the front edge of the punch cover. The distinctive "V" shape makes it easy to distinguish the beginning from the end, since it provides an "arrow" like configuration. Front of tape is always a point. End of tape is always notched.



Tape Storage

An integral storage bin is provided at the rear of the punch housing. It holds a full roll of 1,000' of 1" paper tape. Oiled paper stock is used. Diameter of roll is 8".

Chad Collection

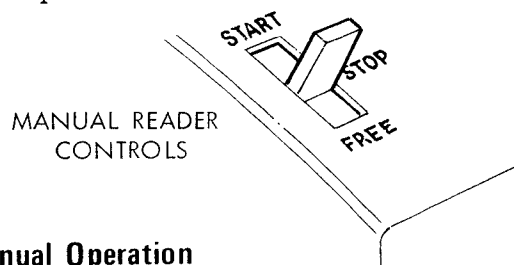
A "chad box" that attaches to the side of the terminal pedestal is used to collect paper particles made by the punch. This box is easily removed for periodic cleaning. It's furnished as part of the pedestal mount terminals. If desk mounted terminals are selected, the customer must provide for chad collection.

See "Technical Facts" page 13 for tape specifications.

PAPER TAPE READER

You have a choice of two types of tape readers: one with manual control and one with automatic control. The associated reader drive circuitry is mounted in the Electrical Service Unit.

On the electrical service unit (ESU) with the dc. current interface, the reader drive circuitry has mounting clips which allow easy relocation in the pedestal.



Manual Operation

START -- Reader will run in this position until turned off, end of tape is reached or the tight tape switch is operated.

STOP -- Reader is inoperative in this position.

FREE -- Disengages tape feed mechanism. Allows operator to pull tape through the reader for positioning.

Automatic Operation

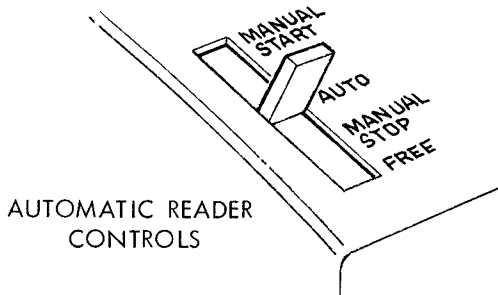
AUTO -- (Automatic mode) spring biased handle is normally in automatic position, so automatic mode is assumed unless operator intervenes. The reader will respond to ASCII control codes as follows:

DC1 or X-ON -- Automatically turns reader on.

DC3 or X-OFF -- Automatically turns reader off.

ENQ or WRU -- Stops reader and calls in remote answer back. If DC1 is received at the end of the answer-back transmission, the interrupted reader will automatically restart.

NOTE: Terminals with automatic reader operation are equipped with an EOT contact for end of transmission control of accessory devices.



AUTOMATIC READER
CONTROLS

MANUAL START -- To activate reader without receiving the signal code DC1, the operator moves handle to **MANUAL START** position. Reader will then operate, with switch returning to **AUTO** position when released.

MANUAL STOP -- To stop the reader, the handle is moved to **MANUAL STOP** position. Handle will return to **AUTO** when released.

FREE -- Allows tape to be moved manually, for repositioning. Switch must be returned manually from this position to **AUTO**.

Control Characters

Two delete characters must follow each control character in paper tape.

Tight Tape Switch

When the tape becomes tight or tangled, the tight tape switch turns off the reader and thus prevents tearing the tape.

Tape Out Switch

When the end of a tape is sensed, the tape out switch turns reader off automatically. Makes it possible to turn the reader on and walk away without fear of needless reader operation.

MOTORS

The customer has the option of selecting either 60 or 50 Hz motors for his terminals. Domestically 60 Hz is the standard while foreign systems use 50 Hz motors.

This is the basis for the division of our Selection Guides, one entire section being for 60 Hz motors and the other for 50 Hz.

INTERFACES

Depending upon your particular system requirements, choose either 20 or 60 ma. dc. current interface or our built-in, frequency shift keying

(FSK) modem. Each type is integrated into an electrical service unit (ESU) (see page 12) which houses the 33 terminal's electrical components and logic and provides a convenient area for electrical interconnection.

CURRENT INTERFACE

All cataloged terminals with the current interface operate on a 20 or 60 ma. dc. signal line. The customer has the option of strapping for either current in accordance with instructions on wiring diagrams accompanying the terminals. As received from the factory, they are wired for 60 ma. dc. operation.

VOLTAGE INTERFACE (E.I.A. RS-232-C)

Applications in which data sets are contemplated may require a data set coupler to connect the terminal's current interface to the data set's voltage interface. The coupler is a two-way interface between voltage signals and the terminal's current signals.

Modification kits are available that conform to E.I.A. Standard RS-232-C.

Order modification kit 186136 if automatic answer is required or 198420 if manual answer is required.

MODEM INTERFACE

Choice of Manual or Automatic Answer

Teletype Corporation's built-in modem provides for operation on voice-grade channels in switched network and private line systems. It offers exceptional operational flexibility for computer access and conversational applications. This FSK (frequency shift keying) modem can provide manual originate/manual answer or manual originate/automatic answer when connected to the appropriate Bell System Data Access Arrangement (DAA). The modem is code insensitive, transmits asynchronously in serial form, and is compatible with Bell System 101, 103, 108, and 113 data sets or their equivalents.

With manual originate/manual answer, the call is established manually by a telephone handset, and the operators exchange voice communication before going to data mode. They may go back to voice communication at any time during the transmission. The call is terminated manually.

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With manual originate/automatic answer, the terminal can receive a call at any time whether an operator is present or not. It will automatically answer, go to data mode, send and/or receive data, and then go "on hook" to await the next call. This gives you the opportunity to use the terminal at night when line changes are lower. As with manual originate/manual answer, voice communication may be established at any time during the call if an operator is present at the called terminal.

Total Terminal Arrangement from a Single Source

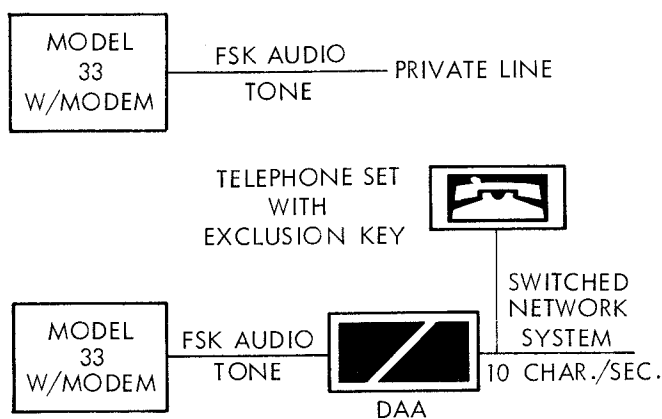
Terminals with the built-in modem are performance-tested as a package by Teletype Corporation. This means you can have a complete terminal arrangement — checked-out and simple to install — from a single source. The only installation adjustment that may be required is setting the signal level so that it matches the telephone line.

Data Access Arrangements (DAA)

The Data access arrangements are:

- Manual Originate/ - Bell System 1000A
Manual Answer CDT or equivalent
- Manual Originate/ - Bell System 1001B
Automatic Answer CBT or equivalent

Refer to page 16 for modem specifications.



For the arrangement shown above, a Bell 502-type telephone set with exclusion key is required for network signaling and voice communication and to perform the voice-data transfer on the telephone line.

The data access arrangement required for connection of a data terminal to the telephone net-

work and the 502-type telephone set must be ordered separately from your local telephone company.

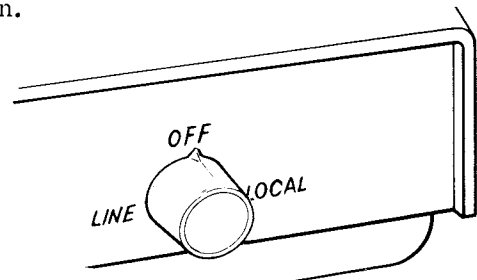
For information on ordering the proper DAA, refer to TELETYPE model 33 and 38 Technical Reference, Part 2, Article 2, "Data Coupler Arrangements Used with Teletype Corporation's Cataloged Model 33 and 38 Terminals with Built-In Modem." Or you can refer to the following two Bell System Technical References for ordering information and the recommended method of connecting your terminals to the DAA's: "Data Access Arrangement CDT for Manual Originating and Answering Terminals," PUB 41801, May, 1971 and "Data Couplers CBS and CBT for Automatic Terminals," Aug., 1970 and the Addendum 1, March, 1971.

There are a number of modem options. Refer to Technical Facts, page 15, for a complete listing.

TERMINAL CONTROLS

DC CURRENT INTERFACE

On terminals with current interface, a three-position rotary switch turns the terminal's motor on and off and selects the mode of operation.



"Off" Position

Motor is off. Terminal is ready to be switched to the LOCAL or LINE position.

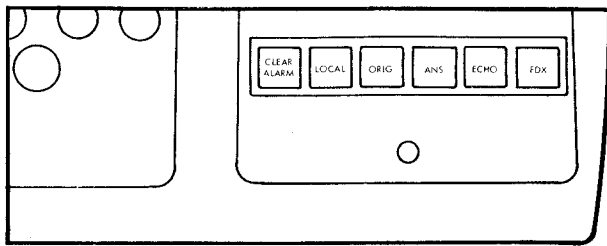
"Local" Position

Motor is on. Terminal has full capabilities (eg, to print copy and punch and read tape), but it cannot send or receive on the signal line. Used for operator practice, maintenance and, in case of ASR, to prepare tape off line.

"Line" Position

Motor is on. Terminal has full capabilities and can send or receive on the signal line.

MODEM INTERFACE



The terminal controls with modem interface are six push buttons found on the lower right side adjacent to the keyboard. Their function is described below:

MODEM INTERFACE CONTROL FUNCTIONS

PUSH BUTTON CONTROL	Manual Originate/Manual Answer DAA 1000A CDT	Manual Originate/Automatic Answer DAA 1001B CBT
 CLEAR ALARM (Red Cap)	<p>Turns terminal motor and transmit carrier off. Terminal responds to the manual answer routine in the normal manner.</p> <p>Illuminates in ALARM. Telephone is functional, but terminal will not respond to ANS. push button when depressed.</p> <p>Terminal motor and carrier will turn off if ALARM occurs during an established call. Telephone must be disconnected manually by the operator.</p>	<p>Turns terminal motor and transmit carrier off. Terminal responds to the automatic answer routine in the normal manner.</p> <p>Illuminates in ALARM. Terminal will not automatically answer an incoming call.</p> <p>Terminal motor and carrier will turn off if ALARM occurs during an established call. Terminal will automatically disconnect.</p>
 LOCAL (Green Cap)	<p>Turns terminal motor on. Terminal has complete local capability, but can not send or receive on signal line.</p>	<p>Terminal will not automatically answer an incoming call. An incoming call is indicated by ringing of the telephone set and by flashing of the ANS. push button.</p>
 ORIG. (Clear Cap)	<p>Turns terminal motor on and allows transmit mark frequency (F1m) to turn on after receipt of receive mark frequency (F2m). When lighted, indicates presence of receive carrier. Motor and carrier will turn off if carrier is not received within 25 seconds.</p>	
 ANS. (Clear Cap)	<p>Depressing the ANS. push button turns the terminal motor and F2m carrier on. Illuminates when receive carrier is present. Motor and carrier will turn off if carrier is not received within 25 seconds. Answer-back will operate automatically (if terminal is so equipped and this feature is enabled).</p> <p>Note: Telephone must be disconnected by the operator.</p>	<p>The ANS. push button flashes in response to ringing when telephone is on hook. The call is automatically answered when terminal is in the data mode. This turns the terminal motor and F2m carrier on. ANS. push button illuminates when receive carrier is present. Answer-back will automatically operate (if terminal is so equipped and this feature is enabled). The call will automatically disconnect if carrier is not received within 25 seconds.</p>
 ECHO (Clear Cap)	<p>Conditions terminal for error-checking or on-line testing. Originating terminal goes to FDX mode. Called terminal goes to ANS. and ECHO modes. Transmitted data is "echoed" back from answering terminal to originating terminal's printer. Correct data on originating terminal's printer gives substantial assurance that the message was received correctly</p>	
 FDX (Clear Cap)	<p>When depressed and lighted, this push button electrically separates the send and receive circuits for full duplex operation. When not depressed and unlighted, the terminal is in the half duplex mode.</p>	

33 DATA TERMINALS

ANSWER BACK

STATION IDENTIFICATION

An answer back feature permits a called station to identify itself. Avoids costly transmission charges because data was misdirected.

CODING

You can easily code the answer back response on a plastic drum which has a capacity of 20 characters. Choose one-, two- or three-cycle operation with 20, 9 or 6 characters per cycle respectively. If multiple-cycle operation is chosen, the identical response is normally used in each cycle. Refer to TELETYPE Bulletin 310B for details.

NON-CONTENTION

The answer back is activated locally by the HERE IS key or by receipt of ENQ from the signal line. To prevent two answer backs from operating simultaneously, the device at the transmitting terminal is not activated when the "ENQ" code is sent from its keyboard or reader.

TRIP OF ANSWER BACK ON CALL CONNECTION

Terminals equipped with answer-back and modem have the option of automatically tripping the answer-back on call connection. This feature may be enabled or disabled by the user. Terminals are factory-wired with this feature enabled.

ELECTRICAL TRIP OF ANSWER BACK

The 187125 Set of Parts provides an additional means of electrically tripping the answer back mechanism from the customer's interface for terminals with dc interface or without ESU.

FURNITURE ARRANGEMENTS

You have two basic arrangements to choose from. Pedestal mount which provides a neat free-standing installation. And a desk mount that can be used where floor space is at a premium.

Pedestal Mount: free-standing installation. Pedestal provides convenient storage area for

modems and auxiliary equipment. Grey-beige color blends nicely with any office decor.

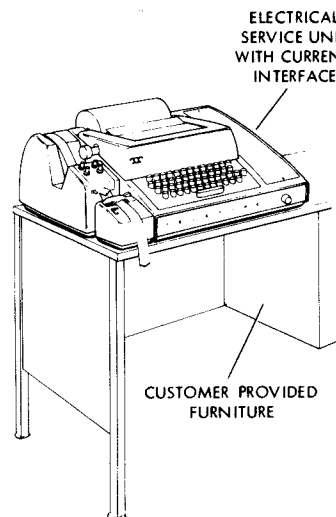
Desk Mount: terminal shipped without pedestal for placement on desk or table. Shipped without copy holder or chad box. These items may be ordered separately if required:

Teletype Part Number

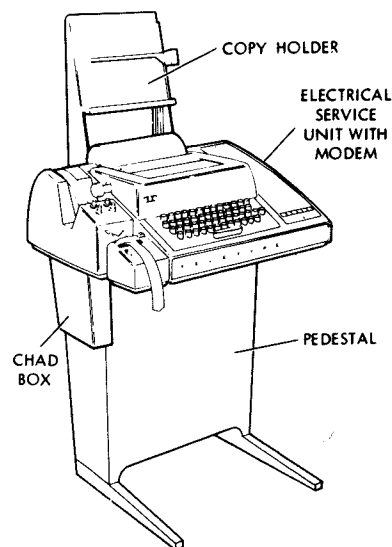
Copyholder	182036
Chad box	182965
Pedestal	183246

Telephone Shelf

A 343691HF telephone shelf attaches to the pedestal of 33's equipped with modem for convenient support of the 502-type telephone set.



DESK MOUNT MODEL 33 ASR



PEDESTAL MOUNT MODEL 33 ASR

DEPENDABLE CONVENIENT SERVICE

Teletype Corporation's products are fully supported by our Product Service Organization. For your convenience, centers are located in various areas across the country. Services

include on-site maintenance and repair on a contractual or "on-call" basis, initial installation and check-out, installation of factory approved modification kits, exchange repair, and overhaul. Special services are also available on request. Contact Teletype Corporation for additional information (see back cover).

TECHNICAL FACTS

CODE

1968 ASCII (X3.4-1968, American National Standard Code for Information Interchange)

X3.4-1968

Bits					COLUMN									
b ₇	b ₆	b ₅	b ₄	b ₃	b ₂	b ₁	0 0 0	0 0 1	0 1 0	0 1 1	1 0 0	1 0 1	1 1 0	1 1 1
ROW					0	1	2	3	4	5	6	7		
0	0	0	0	0	0	0	NUL	DLE	SP	0	⊙	P	`	p
0	0	0	0	1	1	1	SOH	DC1	!	1	A	Q	a	q
0	0	0	1	0	2	2	STX	DC2	"	2	B	R	b	r
0	0	1	1	1	3	3	ETX	DC3	#	3	C	S	c	s
0	1	0	0	0	4	4	EOT	DC4	\$	4	D	T	d	t
0	1	0	1	1	5	5	ENQ	NAK	%	5	E	U	e	u
0	1	1	0	0	6	6	ACK	SYN	&	6	F	V	f	v
0	1	1	1	1	7	7	BEL	ETB	'	7	G	W	g	w
1	0	0	0	0	8	8	BS	CAN	(	8	H	X	h	x
1	0	0	1	1	9	9	HT	EM	)	9	I	Y	i	y
1	0	1	0	0	10	10	LF	SUB	*	:	J	Z	j	z
1	0	1	1	1	11	11	VT	ESC	+	;	K	[	k	{
1	1	0	0	0	12	12	FF	FS	,	<	L	\	l	|
1	1	0	1	1	13	13	CR	GS	-	=	M	]	m	}
1	1	1	0	0	14	14	SO	RS	.	>	N	~	n	~
1	1	1	1	1	15	15	SI	US	/	?	O	—	o	DEL

All characters in these two rows + SP (space) and DEL (delete) are non-printing

"Fold-over Printing" means that lower case characters received by model 33's are actually printed as their upper case equivalent. Codes shown in Columns 6 & 7 of the chart "fold-over" into columns 4 & 5 respectively, (except for "DEL").

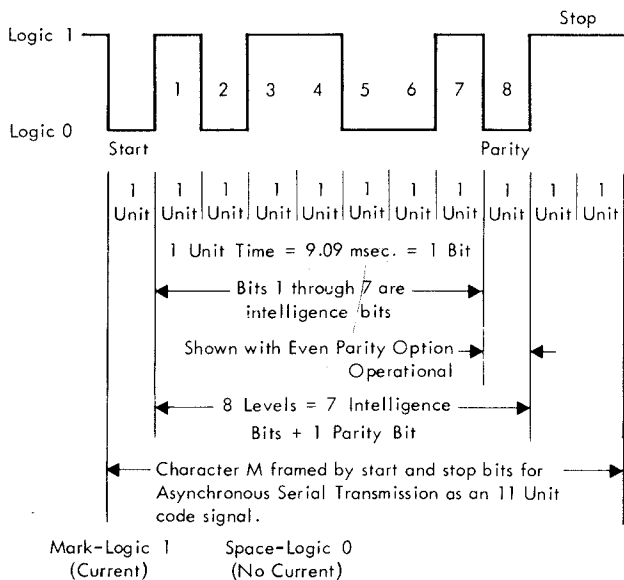
Parity (Keyboard Generated Characters)

Terminals are factory-wired for even parity over the eight bits, but may be strapped by the customer optionally for eight bit always marking (state 1) or always spacing (state 0).

33 DATA TERMINALS

Signal Waveform

8-Level 11 Unit Code Signal Waveform



Transmitting and Receiving Margins

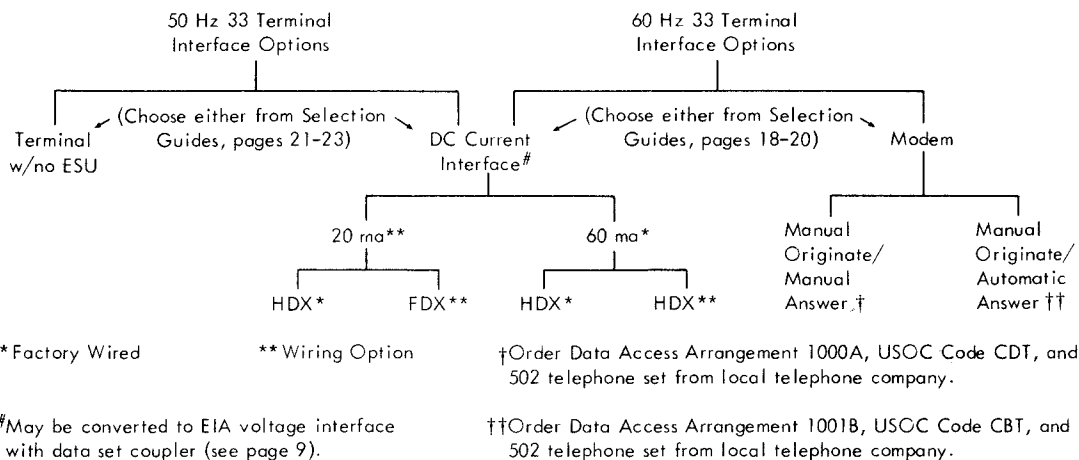
The following design criteria is met by model 33 terminals:

- Receiving — Will accept a signal with a maximum of 35% bias distortion, 33% end distortion.
- Transmitting — Signals from these terminals will have no more than 5% distortion.

SPEED

10 characters/sec, 11 unit code, 110 baud
 100 words/min (word consists of 5 characters + space)
 600 operations/minute

INTERFACE Options



Current Interface

- Signal Line Current — Customer strappable 20 or 60 ma. dc.
- Line Battery — External, current-limited power source must be provided.
- Interface Leads — (1) Only ASR's with automatic readers have end-of-transmission (EOT) leads for data set control at interface.

(2) Paper Alarm indicator "dry" contact leads are brought out to the interface.

(3) Set of Parts 187125 may be ordered to provide the 48 VAC/24 VDC Answer Back Trip Coil. The customer must provide a means of energizing the coil.

MODEM OPTIONS

The following modem options are available. The enabled options for the specified data access arrangements are indicated by an asterisk (*).

	DAA 1000A CDT Manual Answer	DAA 1001B CBT Automatic Answer
1. PAPER ALARM		
*Only ALARM button lights.	X	X
Turns motor and carrier off, and prevents them from going on until alarm is cleared (ALARM button lights).	X	-
Same conditions as above, except a telephone disconnect will be initiated on ALARM condition.	-	X
2. ANSWER-BACK TRIP		
Occurs automatically at called terminal on call connection. (Terminal must have answer-back feature and modem.)		
*Enabled	X	X
Disabled	X	X
3. ECHO MODE		
Output of distributor and break key in ECHO mode.		
*Blinded	X	X
Unblinded	X	X

The terminal provides a 7 conductor cable for interfacing to the data access arrangement. The following leads from the cable connect to the respective DAA's:

Interface Cable Lead	Manual Originate/Manual Answer (DAA 1000A CDT or Equivalent)	Manual Originate/Automatic Answer (DAA 1001B CBT or Equivalent)
Red	DR (Data Ring)	DR (Data Ring)
Orange	DT (Data Tip)	DT (Data Tip)
Yellow		RI (Ring Indicator)
Black		DA (Data Transmission)
Green		OH (Off Hook)
White		+V (positive DC Power)
Blue		-V (Power Return)

33 DATA TERMINALS

Modem

- Mode — Half Duplex (HDX)
Full Duplex (FDX)
- Transmission Method — Serial by bit.
- Modulation — Frequency shift keying (FSK)
- Timing — Asynchronous
- Signal Level — 0 to -12 dBm transmit (adjustable to match transmission network)
— 0 to -50 dBm receive (under control of carrier detect circuitry)
- Echo Suppressor Disable — Receipt of answering terminal's carrier disables echo suppressors on transmission facilities.
- Compatible with — Bell System 101, 103, 108, 113 data set or equivalent.
- Carrier Detect Indication — The ORIG or ANS button will light when depressed if received carrier is present.

Frequencies (Hz):		Receive	Transmit
Originate Mode	Mark	2225	1270
	Space	2025	1070
Answer Mode	Mark	1270	2225
	Space	1070	2025

NOTE: F1m = 1270 F2m = 2225
F1s = 1070 F2s = 2025

RIBBON

Ink impregnated Nylon

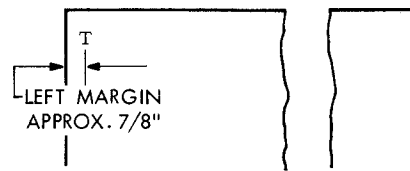
PAGE COPY SPECIFICATIONS

Rolled Paper

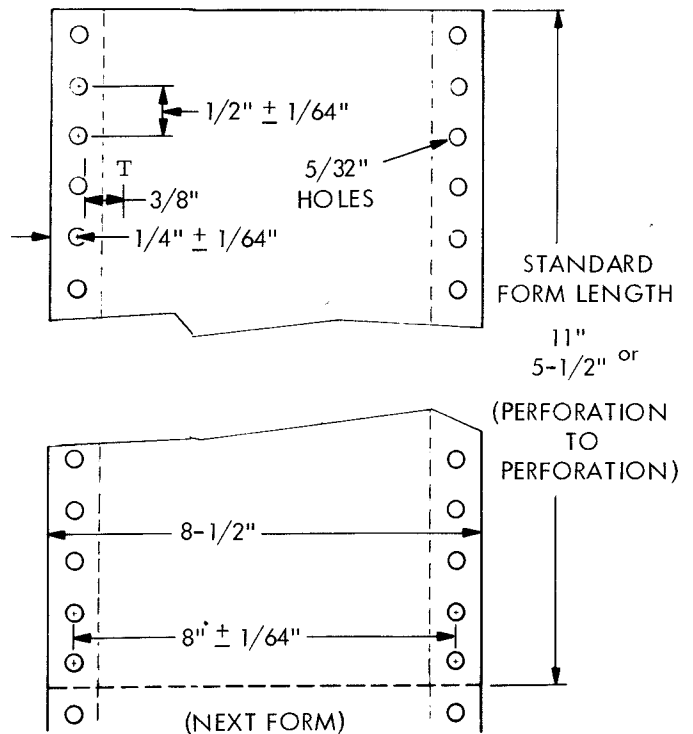
Standard teleprinter roll paper has the following specifications:

- Outside Diameter 5" maximum
- Width of page $8.453 \pm .031$ inches
- Length per roll 400 feet (approx)
- Core Diameter I.D. $1" + .1 - .05$ Inch

Left margin:

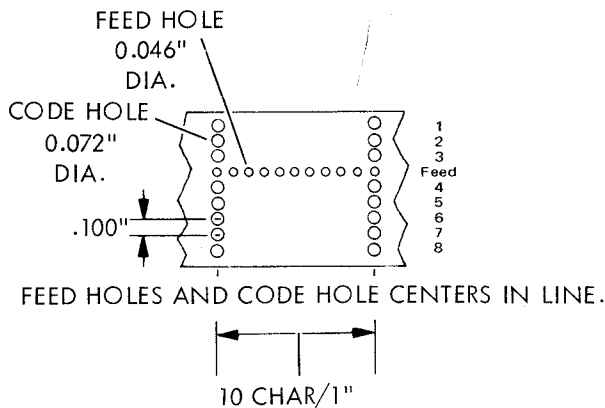


Sprocket (Pin) Feed Forms



PAPER TAPE SPECIFICATIONS

- Type of paper - oiled stock, rolled
- Width - 1 inch
- Thickness - 0.004 inch
- Max. diameter of roll - 8 inches
- Length per roll (approx.) - 1000 feet
- Core diameter of roll - 2 inches



ELECTRICAL REQUIREMENTS

Input Voltages:

- 115 VAC $\pm 10\%$ 60 Hz $\pm 3/4\%$ single phase
- 115 VAC $\pm 10\%$ 50 Hz $\pm 3/4\%$ single phase

Power Requirements:

- Starting Surge-15 amp. maximum
- Running Current-3 amp. nominal (5 amp. maximum)
- Wattage-250 watts nominal

MAINTENANCE

Initial Lubrication - After 100 to 200 hours operation

Maintenance Interval - Every 750 hours or 6 mos., whichever occurs first.

An optional elapsed timer (SOP 188660) is available for recording the "motor-on" time of the terminal to the nearest hour. It mounts in the electrical service unit and is easily installed by the customer.

These publications are shipped with the terminal:

- DC Interface Wiring Diagrams - WDP 0316
- Modem Wiring Diagrams - WDP 0341

Bulletin 310B Vol. 1 - Description, Installation, Call Control Circuit Description, Lubrication, Disassembly and Reassembly

Bulletin 310B Vol. 2 - Adjustments

Bulletin 1184B - Parts

ENVIRONMENTAL REQUIREMENTS

Operating: 40° to 110°F ambient measured outside of terminal cover.

Storage: -40° to 150°F.

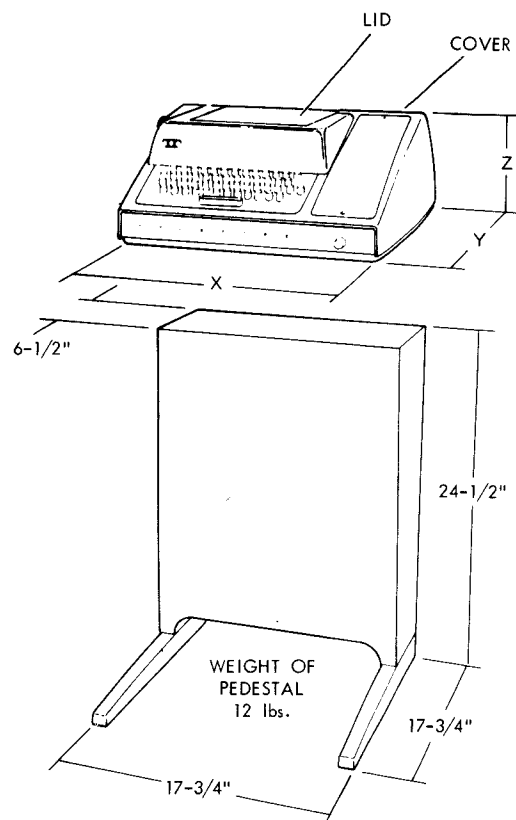
Relative Humidity: 90% maximum at 100°F maximum.

COLOR

Greige (greyish beige) plastic cover with Ivory colored lid.

Pedestal is Greige with satin chrome feet.

WEIGHTS AND DIMENSIONS



TERMINAL (WITHOUT PEDESTAL)

	ASR	KSR	RO
X	22"	18-5/8"	18-5/8"
Y	18-1/2"	18-1/2"	18-1/2"
Z	8-3/8"	8-3/8"	8-3/8"
WT	44 lbs.	40 lbs.	39 lbs.

33 DATA TERMINALS

SELECTION GUIDE

The terminals designated by catalog number on the following pages offer a wide range of operational flexibility. If you have requirements that these configurations don't satisfy, contact your nearest Teletype Sales Office (see back cover).

The selection guide is divided into two parts according to motor option (60 or 50 Hz). Each part contains three charts, one for each terminal configuration (ASR, KSR, RO). The charts

show various arrangements of standard and optional features and provide a catalog number for each arrangement.

60 Hz Motors:

- Model 33 ASR Page 18
- Model 33 KSR Page 19
- Model 33 RO Page 20

50 Hz Motors:

- Model 33 ASR Page 21
- Model 33 KSR Page 22
- Model 33 RO Page 23

MODEL 33 ASR DATA TERMINALS – 60 Hz

STANDARD FEATURES	Type of Paper Feed	Tape Reader Control	Typewheel-Keytop Arrangement			Furniture Arrangement		Catalog Number			
			1968 ASCII TV-Typ Whl DSK-Kytp	ME-Typ Whl DSL-Kytp (Ø-Zero)	NU-Typ Whl DSM-Kytp (Ø-Alpha)	Pedestal Mount Incl Chad Box & Copy Holder	Desk Mount	20/60 Ma. D.C. Neu. Signal Line Interface	Modem with Manual Originate and Manual or Automatic Answer		
ASCII Code 10 char/sec (100 WPM) Even Parity Keyboard 8th bit always Mark or Space* Auto*/Manual Punch Automatic CR & LF on 72nd Char.* End-of-Line (EOL) Space Suppression on 72nd Char. Paper Alarm Answer Back	F R I F C E T E I D O N	Manual	•			•		3320/3JA	3320/3JG		
			•				•	•	3320/3JB	3320/3JH	
				•		•		•	•	3320/3JC	3320/3JJ
					•		•	•	•	3320/3JD	3320/3JK
							•	•	•	3320/3JE	3320/3JL
							•	•	•	3320/3JF	3320/3JM
	S P R F O E C E K E T (Pin)	Automatic	•			•		3320/5JA	3320/5JG		
			•			•	•	3320/5JB	3320/5JH		
				•		•	•	•	3320/5JC	3320/5JJ	
					•		•	•	3320/5JD	3320/5JK	
							•	•	3320/5JE	3320/5JL	
							•	•	3320/5JF	3320/5JM	
	Manual	•			•		3320/4JA	3320/4JG			
		•			•	•	3320/4JB	3320/4JH			
			•		•	•	•	3320/4JC	3320/4JJ		
				•		•	•	3320/4JD	3320/4JK		
						•	•	3320/4JE	3320/4JL		
						•	•	3320/4JF	3320/4JM		
	Automatic	•			•		3320/6JA	3320/6JG			
		•			•	•	3320/6JB	3320/6JH			
			•		•	•	•	3320/6JC	3320/6JJ		
				•		•	•	3320/6JD	3320/6JK		
						•	•	3320/6JE	3320/6JL		
						•	•	3320/6JF	3320/6JM		

*Customer Activated Option

NOTE: All 60 Hz Model 33 Terminals are UL listed (E44516) and CSA listed (File 2412).

MODEL 33 KSR DATA TERMINALS – 60 Hz

STANDARD FEATURES	Type of Paper Feed	Typewheel-Keytop Arrangement			Furniture Arrangement		Catalog Number		
		1968 ASCII TV-Typ Whl DSK-Kytp	ME-Typ Whl DSL-Kytp (Ø-Zero)	NU-Typ Whl DSM-Kytp (Ø-Alpha)	Pedestal Mount Includes Copy Holder	Desk Mount	20/60 Ma. D.C. Neu. Signal Line Interface	Modem with Manual Originate and Manual or Automatic Answer	
ASCII Code 10 char/sec (100 WPM) Even Parity Keyboard 8th bit always Mark or Space* Automatic CR & LF on 72nd Char* End-of-Line (EOL) Space Suppression on 72nd Char. Paper Alarm Answer Back	FRIDION	•			•		3310/3EA	3310/3EG	
		•				•	3310/3EB	3310/3EH	
			•			•		3310/3EC	3310/3EJ
			•				•	3310/3ED	3310/3EK
					•	•		3310/3EE	3310/3EL
					•		•	3310/3EF	3310/3EM
	SPROCKET (Pin)	•				•		3310/4EA	3310/4EG
		•					•	3310/4EB	3310/4EH
			•			•		3310/4EC	3310/4EJ
			•				•	3310/4ED	3310/4EK
					•	•		3310/4EE	3310/4EL
					•		•	3310/4EF	3310/4EM

*Customer Activated Option

NOTE: All 60 Hz Model 33 Terminals are UL listed (E44516) and CSA listed (File 2412).

33 DATA TERMINALS

MODEL 33 RO DATA TERMINALS – 60 Hz

STANDARD FEATURES	Type of Paper Feed	Typewheel Arrangement			ANSWER BACK	Furniture Arrangement		Catalog Number			
		1968 ASCII TV-Typ Whl	ME-Typ Whl (ø-Zero)	NU-Typ Whl (ø-Alpha)		Pedestal Mount Includes Copy Holder	Desk Mount	20/60 Ma. D.C. Neu. Signal Line Interface	Modem with Manual Originate and Manual or Automatic Answer		
ASCII Code 10 char/sec (100 WPM) Automatic CR & LF on 72nd Char.* End-of-Line (EOL) Space Suppression on 72nd Char.*	F R I C T I O N	•				•		3300/1AA	3300/1AG		
		•					•	3300/1AB	3300/1AH		
			•			•		3300/1AC	3300/1AJ		
			•				•	3300/1AD	3300/1AK		
				•		•		3300/1AE	3300/1AL		
				•			•	3300/1AF	3300/1AM		
	P A P E R F E E D	•				•	•		3300/3AA	3300/3AG	
		•				•		•	3300/3AB	3300/3AH	
			•			•	•		3300/3AC	3300/3AJ	
			•			•		•	3300/3AD	3300/3AK	
				•		•	•		3300/3AE	3300/3AL	
				•		•		•	3300/3AF	3300/3AM	
		S P R O E C K E T (Pin)	•					•		3300/2AA	3300/2AG
			•						•	3300/2AB	3300/2AH
	•					•		3300/2AC	3300/2AJ		
	•						•	3300/2AD	3300/2AK		
			•		•			3300/2AE	3300/2AL		
			•				•	3300/2AF	3300/2AM		
•					•	•		3300/4AA	3300/4AG		
•					•		•	3300/4AB	3300/4AH		
	•			•	•		3300/4AC	3300/4AJ			
	•			•		•	3300/4AD	3300/4AK			
		•		•	•		3300/4AE	3300/4AL			
		•		•		•	3300/4AF	3300/4AM			

* Customer Activated Option

NOTE: All 60 Hz Model 33 Terminals are UL listed (E44516) and CSA listed (File 2412).

MODEL 33 ASR DATA TERMINALS – 50 Hz

STANDARD FEATURES	Type of Paper Feed	Tape Reader Control	Typewheel-Keytop Arrangement			Furniture Arrangement		Catalog Number		
			1968 ASCII TV-Typ Whl DSK-Kytp	NU-Typ Whl DSM-Kytp (Ø-Alpha)	ME-Typ Whl DSL-Kytp (Ø-Zero)	Pedestal Mount Incl Chad Box & Copy Holder	Desk Mount	20/60 Ma. D.C. Neu. Signal Line Interface	WITHOUT Electrical Service Unit	
ASCII Code 10 char/sec (100 WPM) Even Parity Keyboard 8th bit always Mark or Space* Auto*/Manual Punch Automatic CR & LF on 72nd Char.* End-of-Line (EOL) Space Suppression on 72nd Char. Paper Alarm Answer Back	FRIFCEIDON	Automatic	•			•		3320/5WA	3320/5WC	
			•				•		3320/5WB	3320/5WD
				•		•			3320/5WJ	3320/5WL
				•			•		3320/5WK	3320/5WM
						•		•	3320/5WE	3320/5WG
						•		•	3320/5WF	3320/5WH
		Manual	•				•		3320/3WA	3320/3WC
			•					•	3320/3WB	3320/3WD
				•			•		3320/3WJ	3320/3WL
				•				•	3320/3WK	3320/3WM
						•		•	3320/3WE	3320/3WG
						•		•	3320/3WF	3320/3WH
	SPRFCEIDONT (Pin)	Automatic	•				•		3320/6WA	3320/6WC
			•				•		3320/6WB	3320/6WD
				•		•			3320/6WJ	3320/6WL
				•				•	3320/6WK	3320/6WM
						•		•	3320/6WE	3320/6WG
						•		•	3320/6WF	3320/6WH
		Manual	•				•		3320/4WA	3320/4WC
			•					•	3320/4WB	3320/4WD
				•			•		3320/4WJ	3320/4WL
				•				•	3320/4WK	3320/4WM
						•		•	3320/4WE	3320/4WG
						•		•	3320/4WF	3320/4WH

*Customer Activated Option

NOTE: All 50 Hz Model 33 Terminals are CSA listed (File 2412).

33 DATA TERMINALS

MODEL 33 KSR DATA TERMINALS – 50 Hz

STANDARD FEATURES	Type of Paper Feed	Typewheel-Keypop Arrangement			Furniture Arrangement		Catalog Number	
		1968 ASCII TV-Typ Whl DSK-Kytp	NU-Typ Whl DSM-Kytp (Ø-Alpha)	ME-Typ Whl DSL-Kytp (Ø-Zero)	Pedestal Mount Includes Copy Holder	Desk Mount	20/60 Ma. D.C. Neu. Signal Line Interface	WITHOUT Electrical Service Unit
ASCII Code 10 char/sec (100 WPM) Even Parity Keyboard 8th bit always Mark or Space* Automatic CR & LF on 72nd Char* End-of-Line (EOL) Space Suppression on 72nd Char. Paper Alarm Answer Back	F R I F C E T E I D O N	•			•		3310/3SA	3310/3SC
		•				•	3310/3SB	3310/3SD
			•		•		3310/3SJ	3310/3SL
			•			•	3310/3SK	3310/3SM
					•	•	3310/3SE	3310/3SG
					•	•	3310/3SF	3310/3SH
	S P R F O E C E K D E T (Pin)	•			•		3310/4SA	3310/4SC
		•				•	3310/4SB	3310/4SD
			•		•		3310/4SJ	3310/4SL
			•			•	3310/4SK	3310/4SM
					•	•	3310/4SE	3310/4SG
					•	•	3310/4SF	3310/4SH

*Customer Activated Option

NOTE: All 50 Hz Model 33 Terminals are CSA listed (File 2412).

MODEL 33 RO DATA TERMINALS – 50 Hz

STANDARD FEATURES	Type of Paper Feed	Typewheel Arrangement			ANSWER BACK	Furniture Arrangement		Catalog Number		
		1968 ASCII TV-Typ Whl	NU-Typ Whl (ø-Alpha)	ME-Typ Whl (ø-Zero)		Pedestal Mount Includes Copy Holder	Desk Mount	20/60 Ma. D.C. Neu. Signal Line Interface	WITHOUT Electrical Service Unit	
ASCII Code 10 char/sec (100 WPM) Automatic CR & LF on 72nd Char.* End-of-Line (EOL) Space Suppression on 72nd Char.*	F R I C T I O N F E E D				•	•		3300/3NA	3300/3NC	
					•		•	3300/3NB	3300/3ND	
							•		3300/1NA	3300/1NC
								•	3300/1NB	3300/1ND
				•		•	•		3300/3NJ	3300/3NL
				•		•		•	3300/3NK	3300/3NM
					•			•	3300/1NJ	3300/1NL
					•			•	3300/1NK	3300/1NM
						•	•		3300/3NE	3300/3NG
						•		•	3300/3NF	3300/3NH
						•		•	3300/1NE	3300/1NG
						•		•	3300/1NF	3300/1NH
Paper Alarm	S P R F O E C K E T (Pin)				•	•		3300/4NA	3300/4NC	
					•		•	3300/4NB	3300/4ND	
							•		3300/2NA	3300/2NC
								•	3300/2NB	3300/2ND
				•		•	•		3300/4NJ	3300/4NL
				•		•		•	3300/4NK	3300/4NM
					•			•	3300/2NJ	3300/2NL
					•			•	3300/2NK	3300/2NM
						•	•		3300/4NE	3300/4NG
						•		•	3300/4NF	3300/4NH
						•		•	3300/2NE	3300/2NG
						•		•	3300/2NF	3300/2NH

*Customer Activated Option

NOTE: All 50 Hz Model 33 Terminals are CSA listed (File 2412).

MODEL 33 RO DATA TERMINALS – 50 Hz

STANDARD FEATURES	Type of Paper Feed	Typewheel Arrangement			ANSWER BACK	Furniture Arrangement		Catalog Number			
		1968 ASCII TV-Typ Whl	NU-Typ Whl (ø-A1pha)	ME-Typ Whl (ø-Zero)		Pedestal Mount Includes Copy Holder	Desk Mount	20/60 Ma. D.C. Neu. Signal Line Interface	WITHOUT Electrical Service Unit		
ASCII Code 10 char/sec (100 WPM) Automatic CR & LF on 72nd Char.* End-of-Line (EOL) Space Suppression on 72nd Char.*	F R I C T I O N F E E D	•			•	•		3300/3NA	3300/3NC		
		•			•		•	3300/3NB	3300/3ND		
		•				•		3300/1NA	3300/1NC		
		•					•	3300/1NB	3300/1ND		
			•			•		3300/3NJ	3300/3NL		
			•			•	•	3300/3NK	3300/3NM		
				•			•	3300/1NJ	3300/1NL		
				•				3300/1NK	3300/1NM		
					•	•	•	3300/3NE	3300/3NG		
					•	•	•	3300/3NF	3300/3NH		
					•		•	3300/1NE	3300/1NG		
					•		•	3300/1NF	3300/1NH		
		Paper Alarm	S P R F O E C E K D E T (Pin)	•			•	•		3300/4NA	3300/4NC
				•			•		•	3300/4NB	3300/4ND
•						•		3300/2NA	3300/2NC		
•							•	3300/2NB	3300/2ND		
	•					•	•	3300/4NJ	3300/4NL		
	•					•		3300/4NK	3300/4NM		
				•			•	3300/2NJ	3300/2NL		
				•			•	3300/2NK	3300/2NM		
					•	•	•	3300/4NE	3300/4NG		
					•	•	•	3300/4NF	3300/4NH		
					•		•	3300/2NE	3300/2NG		
					•		•	3300/2NF	3300/2NH		

*Customer Activated Option

NOTE: All 50 Hz Model 33 Terminals are CSA listed (File 2412).

Geveke Electronics and Automation International

Your office: