TANDBERG DATA

TDV 2220

Ergonomic and buffered – our smartest alternative

– for the requirements of the '80s.

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Holtet
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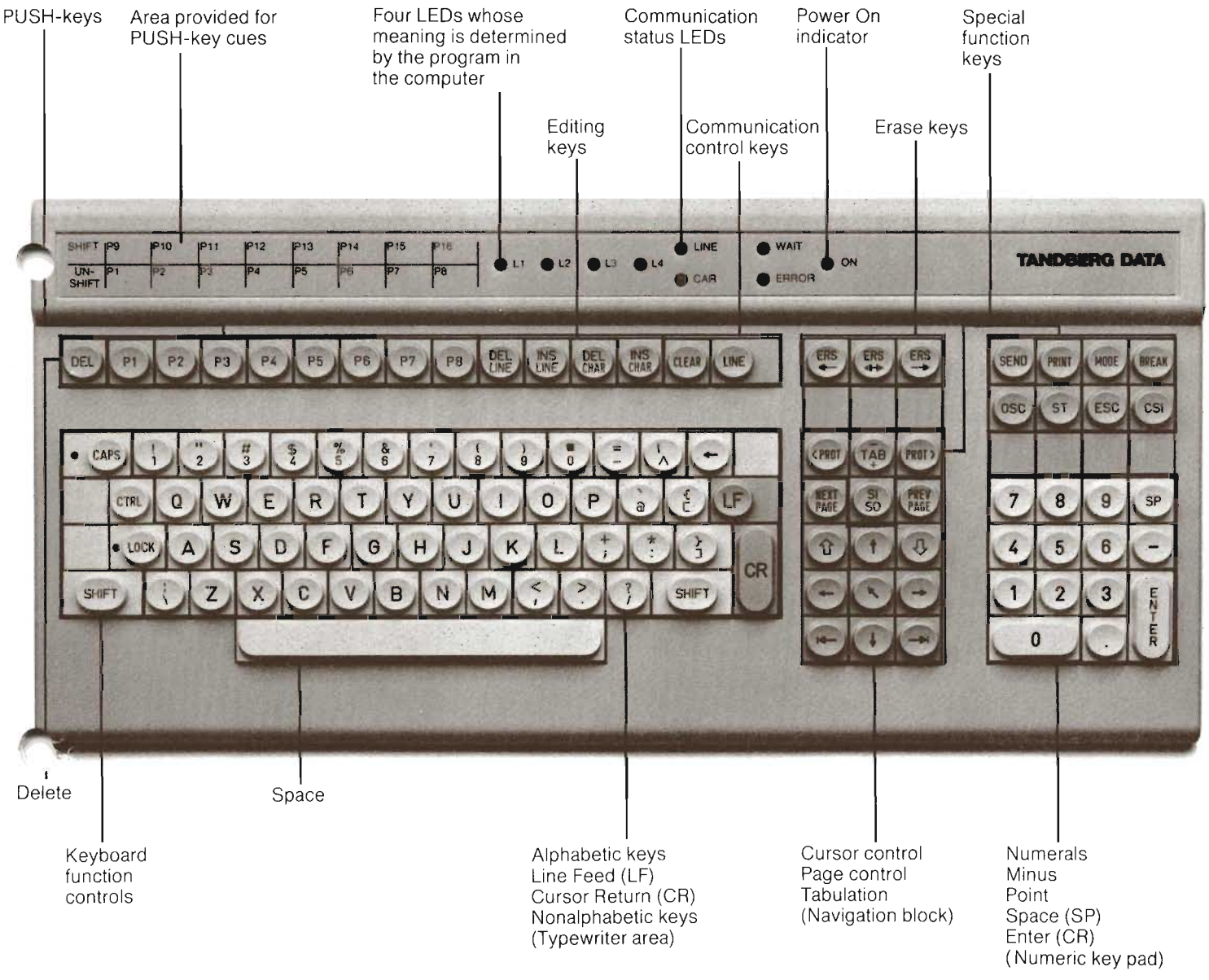
FEATURES

- Full ECMA compatible control characters.
- 15" screen with bonded anti-reflex faceplate.
  Extremely stable picture achieved through use of excellent hardware.
- Stand has height, tilt and swivel adjustment so that a good workplace can be created on a standard office desk.
- Low profile keyboard with non-glare keytops, detached and movable.
- 256 characters include upper and lower case characters, line drawing, histogram, numeric sub-/superscript and plot characters.
- Character by character and block mode transmission.
- 1, 4 or 8 full screen pages, including area definitions. Host may access data on non-current pages as a background activity (e.g writing of forms to be filled in later by the operator).
- Protected and unprotected areas with local type checking of data.
- Full and partial transmit.
- Insert, delete and erase functions.
- Direct cursor addressing from host and cursor position report to host.
- Local printer can be attached. Printer commands for printing all or parts of screen content.
- Local and remote printer control, giving hard copy, terminal bypass or transaction logging.
- Optional one-page print buffer enables printing to be done as a background activity.
- Messages can be sent to the operator without disturbing the picture.
- The operator can send messages to the host without disturbing the picture.
- Asynchronous and isochronous transmission with speeds ranging from 50 to 19200 using XON/XOFF handshake, V.24 (RS-232-C), V.11 (RS-422) or current loop interfaces.
- **Certain terminal characteristics are determined by switches residing in non-volatile memory. Switches can easily be altered using self-explanatory menus.**
- **PUSH-keys allow commonly used words and control sequences to be transmitted by pushing only one key. Strings associated with the keys are stored in non-volatile memory and are not lost when power is turned off. PUSH-key strings can easily be set up by users through self-explanatory menus.**



CONTROL CODES

CO control codes

Hex	Symbol	Action
05	ENQ	Request answer back message
07	BELL	Bell
08	BS	Backspace
09	HT	Horizontal tabulation
0A	LF	Line feed
0D	CR	Cursor return
0E	SO	Shift out
0F	SI	Shift in
11	XON	Transmission on
13	XOFF	Transmission off
1B	ESC	Escape

C1 control codes

Hex		Symbol	Action
7 bits transmission	8 bits		
1B 44	84	INDEX	Cursor down
1B 45	85	NEL	New line
1B 48	88	HTS	Horizontal tabulation set
1B 4D	8D	RI	Cursor up
1B 4E	8E	SS2	Single shift 2
1B 4F	8F	SS3	Single shift 3
1B 50	90	DCS	Device control string
1B 56	96	SPA	Start protected area
1B 57	97	EPA	End protected area
1B 5B	9B	CSI	Control sequence introducer
1B 5C	9C	ST	String terminator
1B 5E	9E	PM	Privacy message

Accepted two and three byte ESC sequences

Hex	Symbol	Action
1B 63	RIS	Reset to initial state
1B 23 35	SWL	Single width line
1B 23 36	DWL	Double width line

Accepted CSI sequences

Terminating character determines function

Lead in	Hex term.	Symbol	Action	
CSI n	40	ICH	Insert character	default 1
CSI n	41	CUU	Cursor up	default 1
CSI n	42	CUD	Cursor down	default 1
CSI n	43	CUF	Cursor forward	default 1
CSI n	44	CUB	Cursor backward	default 1
CSI n	45	CNL	Cursor next line	default 1
CSI n	46	CPL	Cursor previous line	default 1
CSI n	47	CHA	Cursor hor. absolute	default 1
CSI l;c	48	CUP	Cursor position	default 1,1
CSI n	49	CHT	Cursor horizontal tab.	default 1
CSI s	4A	ED	Erase in display 0 – cursor to away 1 – home to cursor 2 – all	default 0
CSI s	4B	EL	Erase in line 0 – cursor to end 1 – beginning to cursor 2 – all	default 0

Accepted CSI sequences, continued

Lead in	Hex term.	Symbol	Action	
CSI n	4C	IL	Insert line	default 1
CSI n	4D	DL	Delete line	default 1
CSI s	4E	EF	Erase in field Same parameters as EL	default 0
CSI s	4F	EA	Erase in area Same parameters as EL	default 0
CSI n	53	SU	Scroll up	default 1
CSI n	54	SD	Scroll down	default 1
CSI n	55	NP	Next page	default 1
CSI n	56	PP	Previous page	default 1
CSI n	57	CTC	Cursor tab control 0 – set tab stop at cur. pos. 2 – clear tab stop at cur. pos. 4,5 – clear all hor. tab stops	default 0
CSI n	58	ECH	Erase character	default 1
CSI n	5A	CBT	Cursor backward tab	default 1
CSI s	63	DA	Device attribute 0 – what are you response is: CSI 31 63 if one page CSI 34 63 if four pages CSI 38 63 if eight pages	default 0
CSI n	64	VPA	Vertical pos. absolute	default 1
CSI s	67	TBC	Tabulation clear 0 – clear tab at cur. pos. 3 – clear all tabs	default 0
CSI ms	68	SM	Set mode where mode can be:	
2 – KAM	Keyboard action mode		7 – VEM Vertical editing mode	
12 – SRM	Send/receive mode		16 – TTM Transfer term. mode	
31 – BOL	Begin. of line wrap		32 – CR Cursor return mode	
35 – EEM	Edit extent mode		36 – EOL End of line wrap mode	
39 – LPP	Lines per page		40 – PCF Printer code format	
42 – PS	Printer speed		43 – PH Printer handshake	
47 – RPM	Roll/page mode		53 – KC Key click	
54 – MB	Margin bell		55 – AR Auto repeat	
60 – RT	Roll type		68 – CT Cursor type	
69 – PM	Printer mode			
CSI s	69	MC	Media copy 0 – Hard copy 4 – Stop relay 5 – Start relay	
CSI ms	6C	RM	Reset mode (see SM for parameters)	
CSI ms	6D	SGR	Select graphic rendition	
0 – normal			2 – low intensity	
4 – underline			5 – blinking	
7 – inverse video			8 – invisible	
50 – neutral				
CSI s	6E	DSR	Device status report – param. 36 Response: CPR – Cursor pos. report CSI p1; p2 52 where: p1 = line number, p2 = column number	
CSI ms	6F	DAQ	Define area qualification	default 0
0 – Accept all			1 – Protected and guarded	
2 – Accept graphics			3 – Accept numerics	
4 – Accept alphabetics			5 – Right justify area	
6 – Zero fill area			7 – Tab stop area	
8 – Protected and unguarded			9 – Space fill area	
25 – Auto send area				

n: numeric character, ASCII coded 1 – 255
l: numeric character, ASCII coded 1 – 24
c: numeric character, ASCII coded 1 – 80
s: selective parameter, ASCII coded values as specified
ms: multiple selective parameters separated by; (semicolon 3B), maximum number of parameters 10

TECHNICAL SPECIFICATIONS

Product type	CRT terminal with detachable keyboard and adjustable stand.	
Mechanical dimensions	Cabinet	Width 380 mm Height 310 mm Depth 362 mm
	Keyboard	Width 486 mm Height 30 mm at middle row Depth 235 mm Slope 6 degrees
	Stand	The base is circular with diameter 340 mm Minimum height 130 mm Maximum height 220 mm Maximum forward tilt 10 degrees Maximum backward tilt 15 degrees Maximum swivel 30 degrees both ways
Display	CRT	15" diagonal with bonded anti-reflex faceplate
	Text area	Height 195 mm (± 2%) Width 260 mm (± 2%)
	Line length	80 characters/line
	Lines	24 lines + status line
	Colour	Bright green text on dark green background (P31 Phosphor)
Characters	Character size	Height 4,45 mm (nominal) Height 4,45 mm (nominal)
	Character matrix	Width 2,10 mm (nominal)
	Cell size	7 x 9 dot characters in a 9 x 14 dot cell Height 7,8 mm (nominal)
	Character distance	Width 3,25 mm (nominal)
	Line distance	1,08 mm (nominal)
	Character sets	3,34 mm (nominal) Full upper and lower case character sets are available in International, German, Swedish, ECMA Norwegian and Norwegian versions. All standard sets contain 95 semigraphic characters for subscript/superscript
	Display modes	Normal, low intensity, underline, blinking, inverse video, invisible and combinations*
	Refresh rate	50 Hz
	Cursor	Underline blinking and steady block

*All combinations are not available.

Keyboard	Number of keys	111 with matt surface
	Stroke length	4 mm
	Interface	Serial asynchronous communication is used between keyboard and terminal
	Cable	6 wire coiled flexible cable
	Indicators	8 LEDs are available
	Sound	A bell and click transducer is included
Line interface	Speed	50, 75, 110, 134,5, 200, 300, 600, 1200, 2400, 4800, 9600 and 19200 baud (top speed requires handshake)
	Formats	7 or 8 bits asynchronous ASCII
	Parity	None, even or odd
	Stop bits	1 or 2
	Electrical standard	V.24 and V.11 Current loop is optional.
	Handshake	XON/XOFF
Printer interface	Speed	50, 75, 110, 134,5, 200, 300, 600, 1200, 2400, 4800, 9600 and 19200 baud (top speed requires handshake)
	Formats	7 or 8 bits asynchronous ASCII*
	Parity	7 bits even or odd* 8 bits none, even or odd*
	Stop bits	1 or 2*
	Electrical standard	V.11 V.24 or current loop is optional
	Handshake	Busy line and XON/XOFF
		*All combinations are not available.
Power requirements	Voltage	220V +10/−15% or 115 +10/−15% (optional)
	Frequency	48 – 52 Hz
	Power	50 W max. (90 VA)
	Inrush current	25 A max.
	Noise	Within VDE 0875/6.77
Environment	Temperature	0 – 40 degrees C ambient
	Humidity	15 – 80%

ORDERING INFORMATION

Products		Number
	TDV 2220 International	4029
	TDV 2220 ECMA Norwegian	4031
	TDV 2220 Norwegian	4033
	TDV 2220 Swedish	4035
	TDV 2220 German	4037
Options		
	Current loop adapter line	961145
	Current loop adapter printer	961145
	V.24 adapter printer	961120
	Print buffer	961262
	Multi page option 1 (3 extra pages)	961148
	Multi page option 2 (7 extra pages)	961147
	Security locks	961171
Documentation		
	TDV 2220 Owner's manual	961329

TANDBERG DATA

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