



Digital Equipment Corporation

ENGINEERING SPECIFICATION

March 10, 1998

Title: PCXAT-DB 4/8 GB ATAPI Interface Travan Tape Drive

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REVISIONS

Table with 7 columns: REV, DESCRIPTION, CHG NO, ORIG, DATE, APPD BY, DATE. Row 1: A, Release to ECO Control, P. Raikunen, 3/10/98, B. McLane, 3/10/98

Table with 6 columns: Engineer, Approved, Size, Code, Number, Rev. Row 1: P. Raikunen, B. McLane, K, SP, PCXAT-DB-DBT, A. Bottom row: Sheet 1 of 10



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General Description:

This specification defines the detailed requirements of a 3 1/2 inch 4/8 gigabyte Travan tape drive with an ATAPI Interface, with a 5 1/4 inch adapter bracket and bezel

Applicable Documents (per latest revision on date of order):

International Organization For Standardization Standards:

ISO DIS 7779 Acoustics: Measurement of Noise Emitted from Computer Business Equipment - Second draft proposal June, 1982

ISO 9000 Quality Management and Quality Assurance

Federal Communications Commission:

FCC Part 15, Subpart B for class B equipment in an enclosure

Underwriter's Laboratories, Inc.

UL-STD-1950 Safety of information Technology Equipment with sub clauses 1-7 Applicable Appendix and Supplement B.

Engineer	Approved	Size	Code	Number	Rev
<b>P. Raikunen</b>	<b>B. McLane</b>	<b>K</b>	<b>SP</b>	<b>PCXAT-DB-DBT</b>	<b>A</b>
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Canadian Standards Association:

CSA-STD-C22.2 No. 950 Safety of Information Technology Equipment including Electrical Business Equipment.

International Electrotechnical Commission:

EN-60950(IEC 950) Safety of Telecommunications Apparatus including Information Processing Equipment

C.I.S.P.R.22 Class B

The Council of European Communities:

89/366/EEC C E Mark

SFF Committee:

SFF-8020i Rev 2.6 ATAPI Specifications
SFF-8028i Rev 1.0 ATAPI Specifications

Quarter-Inch Cartridge Standards

QIC-170 Preformatted magnetic minicartridge
QIC-157 ATAPI command set for streaming tape
QIC-3095-MC Serial recorded magnetic tape minicartridge
QIC-3080-MC Serial recorded magnetic tape minicartridge

Seagate Technology

10002475-003 STT8000A ATAPI Minicartridge Drive Product Description Manual

Table with columns: Engineer (P. Raikunen), Approved (B. McLane), Size (K), Code (SP), Number (PCXAT-DB-DBT), Rev (A). Includes footer 'Sheet 3 of 10'.

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This drive will comply to the product description in the supplier's product description manual, for the STT8000A, and this specification.

**2.1 Drive Performance:**

The following parameters are the minimum requirements to meet this product specification.

Capacity	
(uncompressed)	4.0 gigabytes—900 Oe 740' Travan cartridge
(compressed)	8.0 gigabytes—900 Oe 740' Travan cartridge
Effective backup rate	30 MB/min typical native; 45 MB/min typical compressed
Data transfer rate	300/450/600 KB/second <i>FastSense™</i>
Tape speed	
Read/Write	33, 51, or 77 ips
Search/Rewind	90 ips maximum
Recording method	Serpentine
Recording format	QIC-3095-MC
Recording code	1,7 RLL
Error recovery	Reed Solomon ECC
Recording unrecoverable errors	Less than 1 in $10^{15}$ data bits
Head configuration	Wide write/narrow read
Recording media	900 Oe 740' Travan TR-4
Cartridge size	3.2 in. x 2.4 in. x 0.4 in. (81 mm x 61 mm)
Data density	67,733 bpi
Tracks	72 data tracks, one (1) directory track
Transfer Rate PIO 2	8.33 MB/sec max
Transfer Rate DMA	8.33 MB/sec max
Cache	512 KB

**3.0 Physical Specifications:****Mechanical Dimensions (See Figure 1):**

	Metric	English
Height	43 mm ± 0.03 mm	1.7 inch ± 0.01 inch
Width	149.1 mm ± 0.03 mm	5.87 inches ± 0.01 inch
Depth	161.5 mm ± 0.04 mm	6.36 inches ± 0.02 inch
Weight	0.7 kg ± 0.05 kg	1.5 pounds ± 0.11 pound

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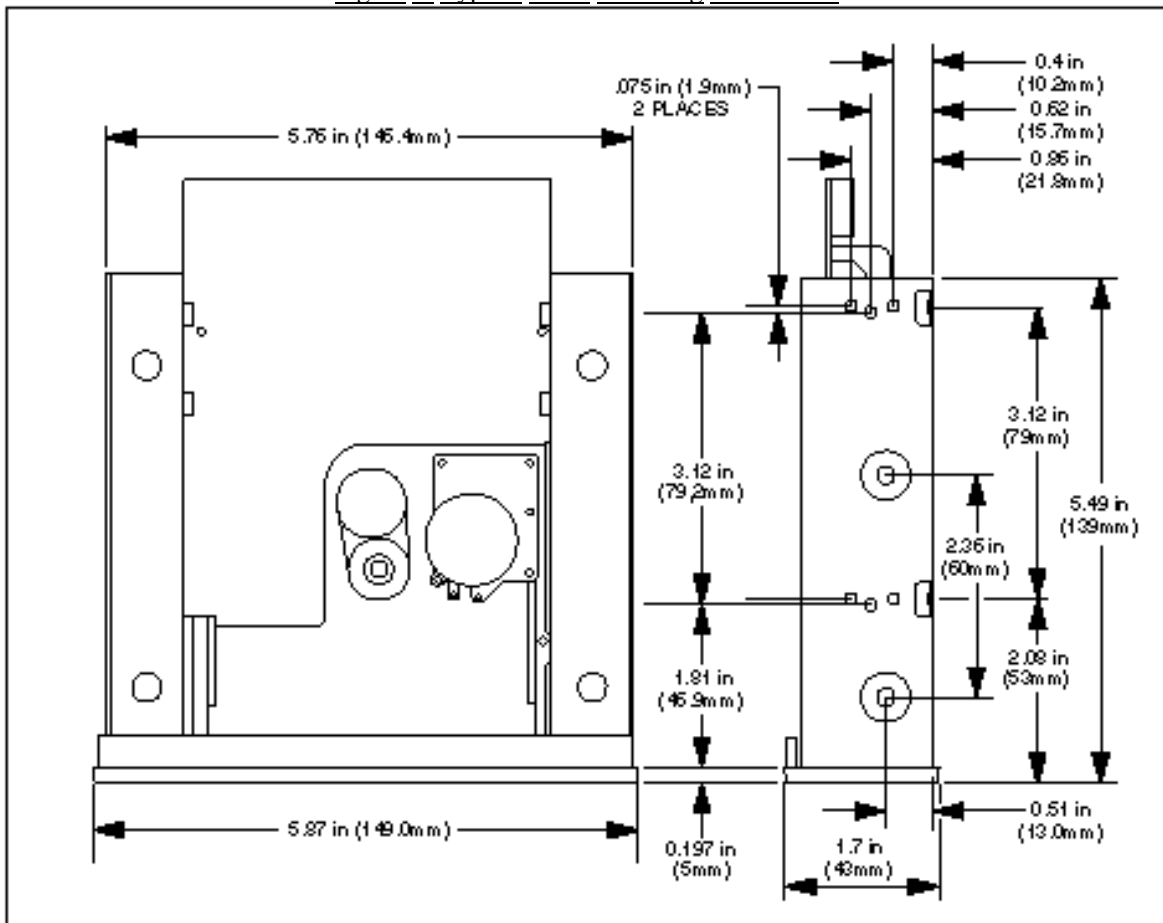
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3.2 Drive Mounting:

For mounting, M3 x 8 screws are recommended. Mounting screw torque should not exceed 8 inch-pounds

Figure 1: Typical Drive Mounting Dimensions



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## 4.0 Power Requirements:

Supply Voltage Requirement: The voltages required to operate the drive are +5VDC  $\pm 5\%$ , and +12VDC  $\pm 8\%$  measured at the interface side of the power connector referenced to it's associated return ground. Maximum power supply ripple allowed: 100 mV(+5V) 200 mV(+12V) peak to peak, 0-20 MHz.

## 4.1 Drive Current Requirements: All values are typical except Spin-up Mode.

Mode	12VDC +/- 10%	5VDC +/- 5%	Power
Maximum Operating	1.80 A	1.00 A	26.6 W
Standby	250 ma	600 ma	6.0 W
Surge (Max 300 msec)	2.00 A	1.00 A	29.0 W

## 5.0 Environmental Requirements

6.1 Acoustics: at Idle 55 dBa Max @ 1 meter

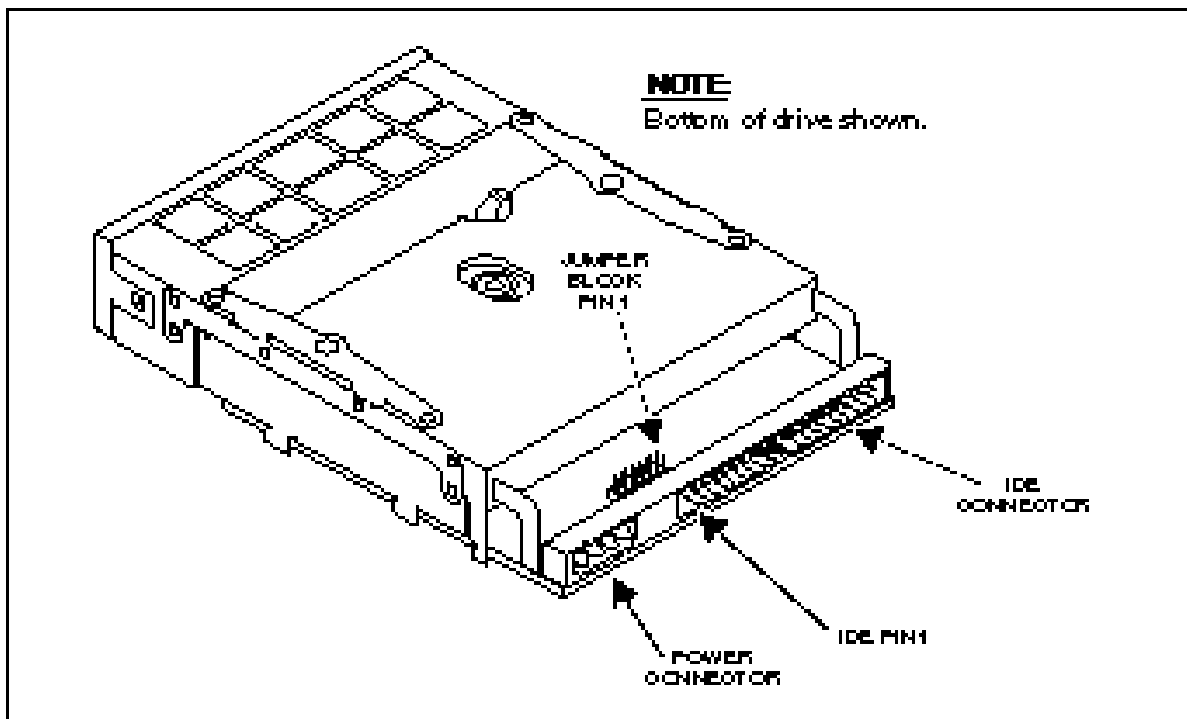
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## 6.0 Jumper Configuration:

## Location of Connectors

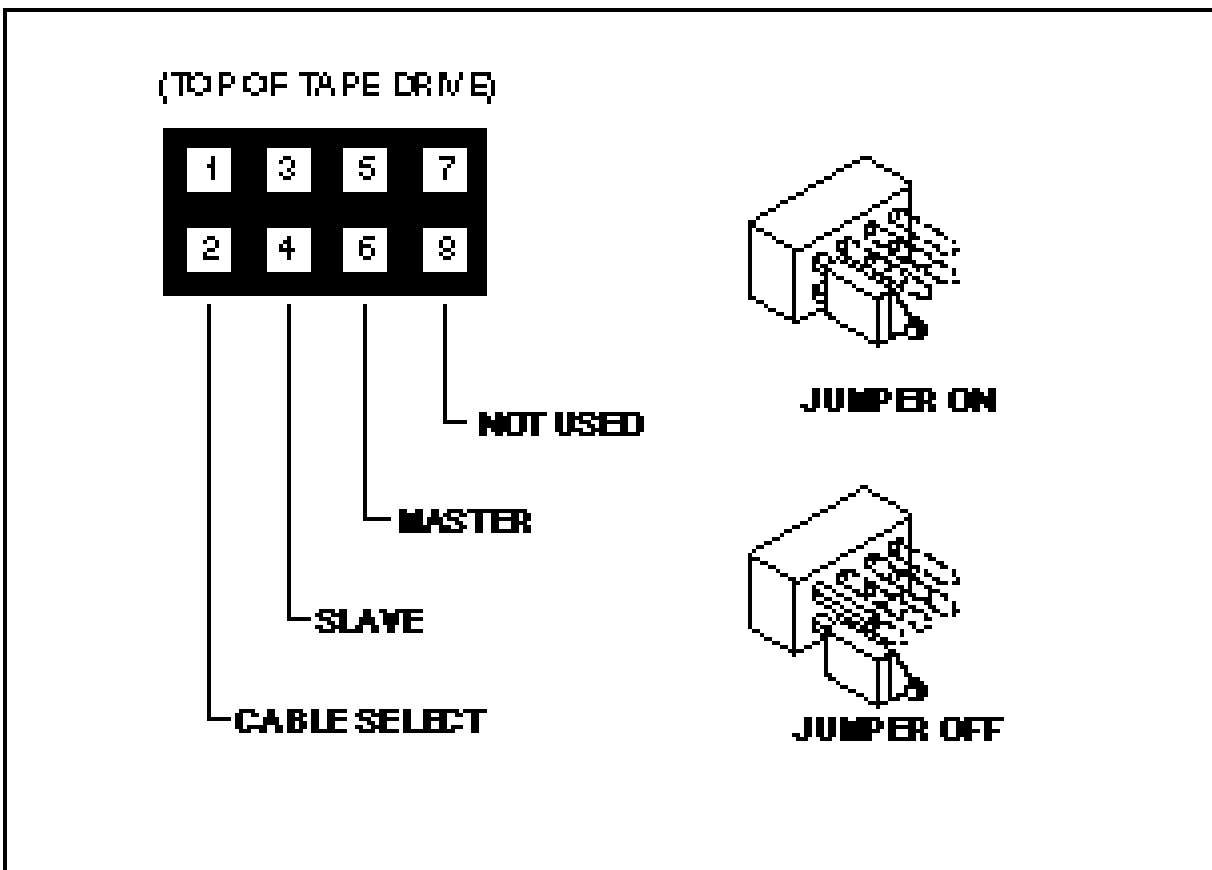


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## Jumper Block and Locations



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7.0 AT Interface connector pin assignments:

7.1 In the following table:

- indicates active low signal.

Direction(Dir) is with respect to the drive.

IN indicates input to the drive.

OUT indicates output from the drive.

I/O indicates the signal is bi-directional

Reserved pins/ground do not have direction

PDIAG- and DASP- are used for communication between the Master and Slave drives.

Pin	Signal	Dir	Pin	Signal	Dir
1	RESET-	IN	2	Ground	-
3	Data Bit 7	I/O	4	Data Bit 8	I/O
5	Data Bit 6	I/O	6	Data Bit 9	I/O
7	Data Bit 5	I/O	8	Data Bit 10	I/O
9	Data Bit 4	I/O	10	Data Bit 11	I/O
11	Data Bit 3	I/O	12	Data Bit 12	I/O
13	Data Bit 2	I/O	14	Data Bit 13	I/O
15	Data Bit 1	I/O	16	Data Bit 14	I/O
17	Data Bit 0	I/O	18	Data Bit 15	I/O
19	Ground	-	20	Key	No Pin
21	DMARQ	OUT	22	Ground	-
23	DIOW-	IN	24	Ground	-
25	DIOR-	IN	26	Ground	-
27	IORDY	OUT	28	CSEL	-
29	DACK1-	IN	30	Ground	-
31	INTRQ	OUT	32	Reserved	-
33	DA1	IN	34	PDIAG-	I/O
35	DA0	IN	36	DA2	IN
37	CS1FX-	IN	38	CS3FX-	IN
39	DASP-	I/O	40	Ground	-

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Title: PCXAT-DB 4/8 GB ATAPI Interface Travan Tape Drive**7.2 Interface Connectors:**

The recommended connectors and their numbers are shown below:

7.3 40-Pin Connector	3M 3417-7000 or equivalent
Strain Relief	3M 3448-2040 or equivalent
Flat Cable(Stranded 28 AWG)	3M 3365-40 or equivalent
Flat Cable(Stranded 28 AWG)	3M 3517-40 (shielded) or equivalent

**Note:** The Maximum cable length is 45.7 cm(18 in), to key the IDE mating connector you must plug the hole at pin 20.**7.4 DC Power Connector:**

4-pin power connector	AMP P/N 84069-1 or equivalent
Loose-piece contacts	AMP P/N 61173-4 or equivalent
Strip contacts	AMP P/N 350078-4 or equivalent
3-pin connector	Molex P/N 39-00-0033 or equivalent
Strip contacts	Molex P/N 39-00-0023 or equivalent
Loose-piece contacts	Molex P/N 39-00-00341 or equivalent

**8.0 Reliability:****9.1 MTBF:**

The tape drive shall demonstrate 200,000 hours MTBF at a 20% duty cycle of power on, and operational time, and as measured by the Ongoing Reliability Test

**9.0 Drive Ship Configuration** The following drive parameters will be set at the factory prior to shipment.**10.1 Jumper Configuration**

Slave JP1 pins 3-4

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