WHITE ELECTRONIC DESIGNS

TECHNICAL SPECIFICATIONS

IDE 20 SERIES FLASH DRIVE 2.5"

EDI7P008 IDE 2011C25	**8MB**
EDI7P016 IDE 2011C25	**16MB**
EDI7P032 IDE 2011C25	**32MB**
EDI7P040 IDE 2011C25	**40MB**
EDI7P048 IDE 2011C25	**48MB**

Description

Models 7P008IDE20, 7P016IDE20, 7P032IDE20, 7P040IDE20, 7P048IDE20 are Flash IDE drives. They are non-volatile mass memory storage systems, for mobile computing and industrial applications. Flashes drives fit into standard disk drive bays and use the industry standard IDE interface. They are light-weight, low profile devices.

System Features

- MS DOS compatible

- Low power

- Power down mode

- 3V or 5V supply

- High reliability based on wear leveling system

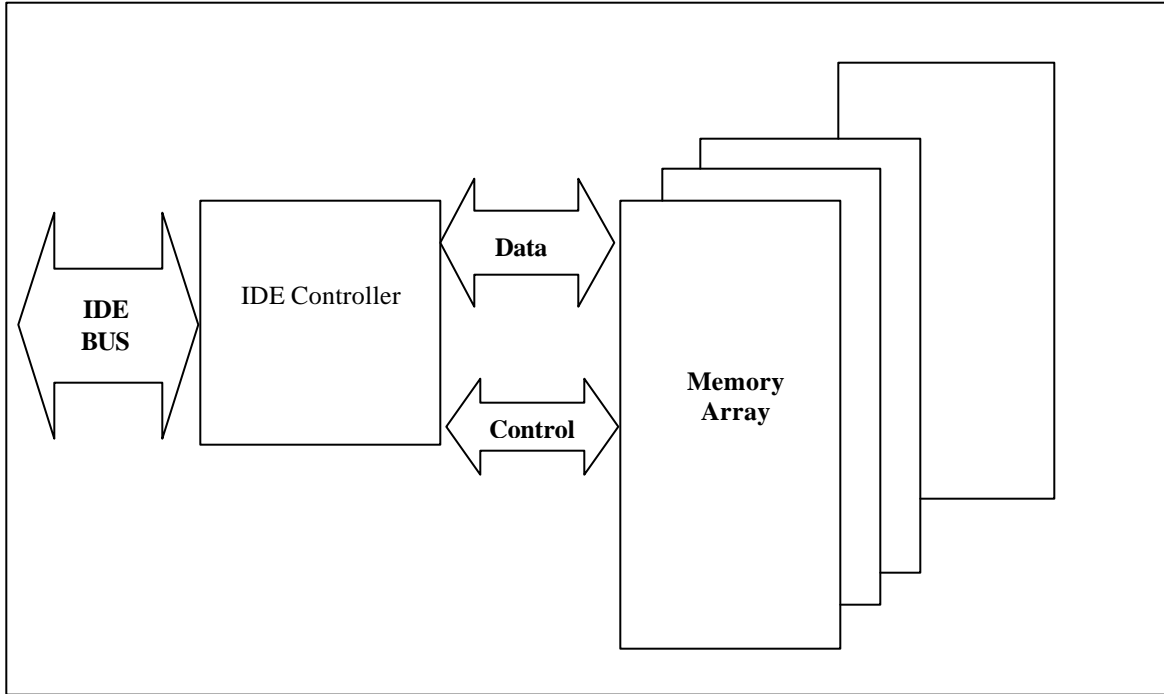- Automatic error detection and correction

- Block size 512 bytes

Figure 1: Card Block Diagram

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Interface Description

The IDE20 flash drive complies with the ATA-3 standard.

Supported modes:

- PIO mode 1, 2, 3 and 4

Related document: **American National Standard X3T9.2 AT Attachement Interface document**

Drive Line Up

Drive type	Drive density	Capacity (3)	Total sectors/ card (2)	Sectors / track	Number of heads	Number of cylinders
7P008ATA2003C25	8MB	8,060,928 Byte	15,744	32	2	246
7P016ATA2003C25	16MB	16,121,856 Byte	31,488	32	4	246
7P032ATA2003C25	32MB	32,243,712 Byte	62,976	32	4	492
7P040ATA2003C25	40MB	40,370,176 Byte	78,848	32	4	616
7P048ATA2003C25	48MB	48,365,568 Byte	94,464	32	4	738

Notes: 1. Total tracks = number of heads $\times$ number of cylinders.
2. Total sectors/card = sectors/track $\times$ number of heads $\times$ number of the cylinders.
3. It is the logical address capacity including the area which is used for file system.

Card Pin Assignment

| Pin NO.	True IDE mode Signal name	I/O	Pin NO.	True IDE mode Signal name	I/O
1	-RESET	I	2	GND	Ground
3	D7	I/O	4	D8	I/O
5	D6	I/O	6	D9	I/O
7	D5	I/O	8	D10	I/O
9	D4	I/O	10	D11	I/O
11	D3	I/O	12	D12	I/O
13	D2	I/O	14	D13	I/O
15	D1	I/O	16	D14	I/O
17	D0	I/O	18	D15	I/O
19	GND	Ground	20	key	*removed*
21	Reserved	NC	22	GND	Ground
23	-IOW	I	24	GND	Ground
25	-IOR	I	26	GND	Ground
27	WAIT	O	28	CSEL	I
29	reserved	NC	30	GND	Ground
31	IRQ	O	32	-IOCS16	O
33	A1	I	34	-PDIAG	I/O
35	A0	I	36	A2	I
37	-CE1	I	38	-CE2	I
39	-DASP	I/O	40	GND	Ground
41	Vcc	power	42	Vcc	power
43	GND	Ground	44	reserved	NC
45	key	*removed*	46	key	*removed*
47	GND	Ground	48	SLAVE	I
49	SLAVE	I	50	GND	Ground
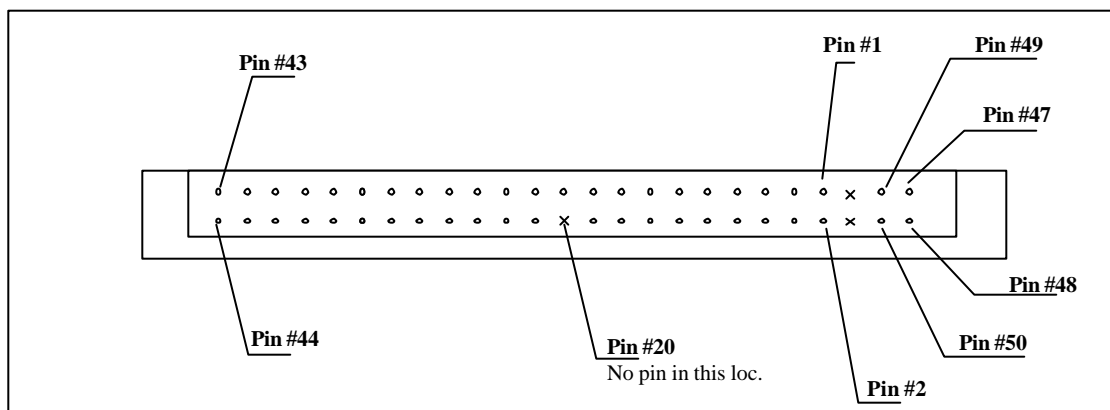
Figure 2: Pin Configuration

Drive Pin Explanation

Address bus (A0 to A2: input): In True IDE Mode only A [2 : 0] are used for selecting the one of eight registers in the Task File.

Data bus (D0 to D15: input/output): Data bus is D0 to D15. D0 is the LSB of the Even Byte of the Word. D8 is the LSB of the Odd Byte of the Word.

Card enable (-CE1, -CE2: input): In True IDE Mode -CE2 is used for select the Alternate Status Register and the Device Control Register while -CE1 is the chip select for the other task file registers.

I/O read (-IORD: input): -IORD is used for control of read data in the Task File area.

I/O write (-IOWR: input): -IOWR is used for control of data write in the Task File area.

Interrupt request (IRQ: output): In True IDE Mode the signal is the active high Interrupt Request to the host.

-IOIS16: (output) In True IDE Mode this output signal is asserted low when this device is expecting a word data transfer cycle.

Disk active/slave present (-DASP: input/output): In True IDE Mode -DASP is the Disk Active/Slave Present signal in the Master/Slave handshake protocol.

Reset (-RESET: input): By assertion of the RESET signal, all registers of this card are cleared and the RDY/-BSY signal turns to high level. In True IDE Mode -RESET is the active low hardware reset from the host.

Wait (-WAIT, IORDY: output):. In True IDE Mode this output signal may be used as IORDY. As for this controller, this output is high impedance state constantly.

Pass diagnostic (-PDIAG: input/output):. In True IDE Mode, -PDIAG is the Pass Diagnostic signal in the Master/Slave handshake protocol.

Card select (-CSEL: input): This internally pulled up signal is used to configure this device as a Master or a Slave when configured in the True IDE Mode. When this pin is grounded, this device is configured as a Master. When the pin is open, this device is configured as a Slave.

Master/Slave configuration: If the flash drive is being installed as a second drive (or Slave), pin 48 or pin 49 must be grounded. Pins 48 and 49 are inputs with pull up resistors and they are shorted internally. If both pins are open, the flash drive is configured as the Master drive or as the only one drive in the system.

NOTE: Detailed description of flash drive functionality, including timing can be found in the technical specification for PCMCIA card: **ATA20 series**.

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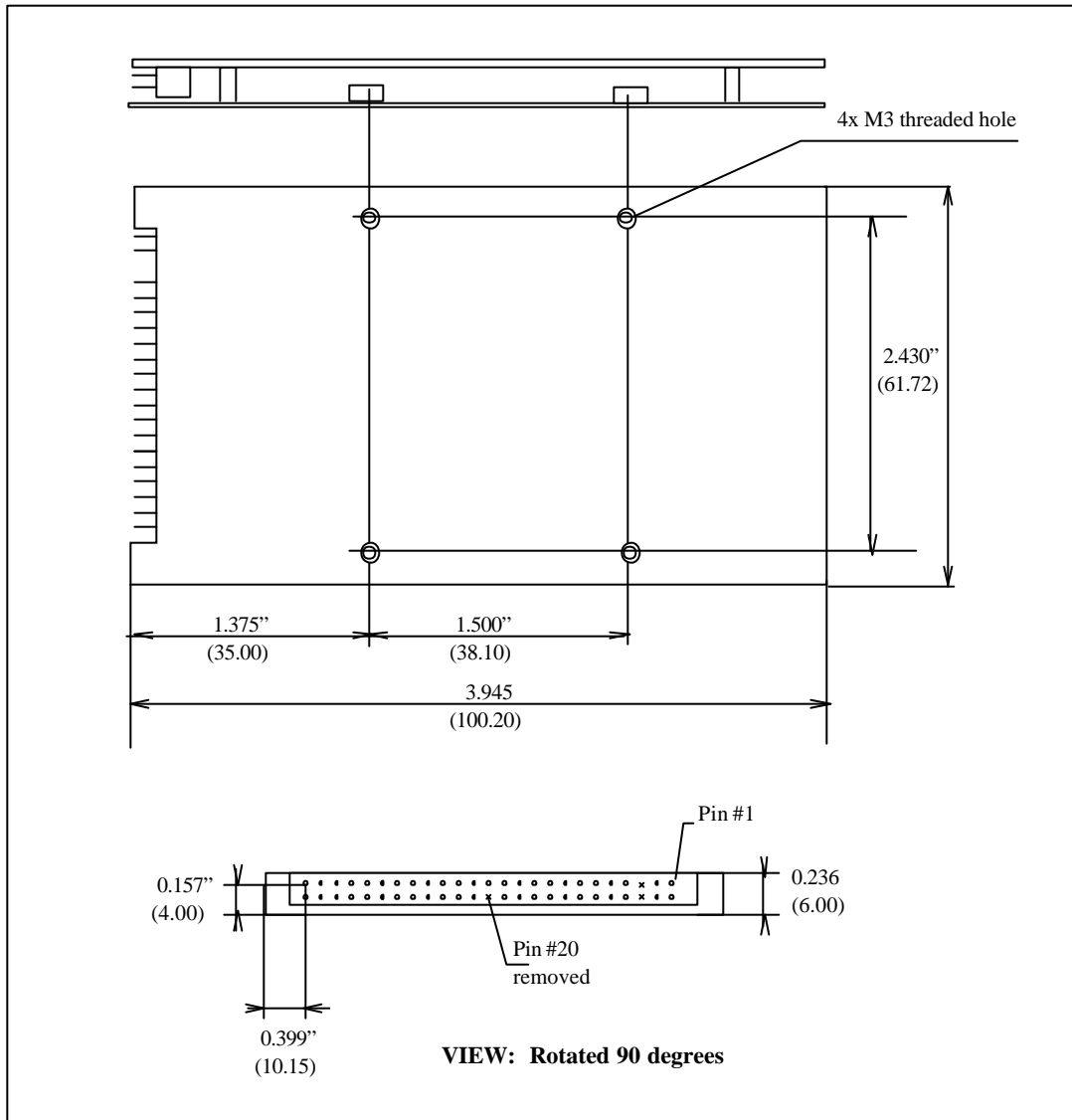## Physical Outline

4x M3 threaded hole

2.430"
(61.72)

1.375"
(35.00)

1.500"
(38.10)

3.945
(100.20)

Pin #1

0.157"
(4.00)

0.236
(6.00)

Pin #20
removed

0.399"
(10.15)

VIEW: Rotated 90 degrees

Figure 3: Physical Dimensions - Version 1

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1.375"
(35.00)

1.500"
(38.10)

4x M3 threaded hole

2.430"
(61.72)

0.551
(14.00)

3.016
(76.61)

3.945
(100.20)

Pin #1

0.157"
(4.00)

Pin #20 removed

0.236
(6.00)

0.399"
(10.15)

VIEW: Rotated 90 degrees

Notes:

1. Dimensions are in inches ["] and in [mm]
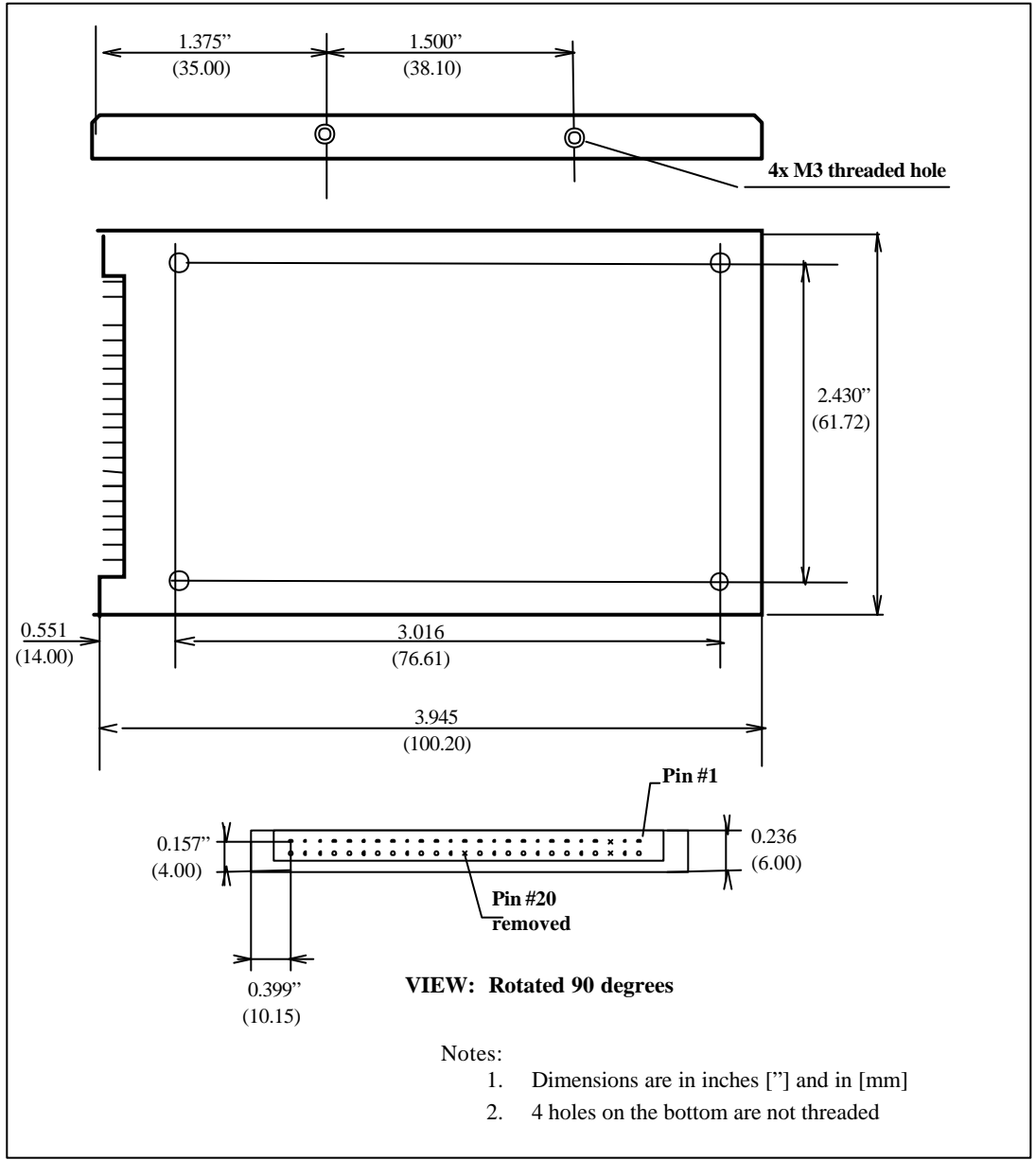2. 4 holes on the bottom are not threaded

Figure 4: Physical Dimensions - Version 2

Ordering Information

EDI7P XXX **IDE** YY SS T ZZ

Where

XXX (unformatted capacity):

008	8MB	
016	16MB	
032	32MB	
040	40MB	
048	48MB	
in future higher capacity available:		
064	64MB	
080	80MB	
096	96MB	
160	160MB	
192	192MB	
256	256MB	
512	512MB	
1G0	1024MB (1GB)	

YY:	20	Standard, 3V/5V: (Controller type = HN)
SS:	11	2.5" IDE format: Version 1
	12	2.5" IDE format: Version 2
T:	C	Commercial Temperature Range
	I	Industrial Temperature Range
ZZ:	25	250ns

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Revision Record

Rev.	Date	Contents of Modification	Drawn by
0	Feb 7, 1999	Initial issue	W. Brys
1	May 27, 1999	Company/Logo change	W. Brys
2	May 18, 2000	Added Figure for Dimensions of Version 2 Added Version 2 housing to Ordering Information	W. Brys

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