MICROPOLIS 1558 DISK DRIVE
SPECIFICATIONS

```
                                Model Number
Unformatted Capacity:            1558-15
```

```
   Total Mbytes     -------------------- 382.3 ------------------------
   Disk Platters    ------------------------ 8 ------------------------
   Read/Write Heads ----------------------- 15 ------------------------
   Cylinders        -------------------- 1224 ------------------------
   Bytes per track  ------------------ 20,832 ------------------------
```

Formatted Capacity (typical)

```
   Total Mbytes     ------------------ 338.1 ------------------------
   Bytes per Sector ---------------------- 512 ------------------------
   Sectors per Track ---------------------- 36 ------------------------
```

PC Drive Types

   If you are using third-party installation software or an on-board BIOS on the
   controller, follow the instructions included with the software or controller.
   Otherwise, examine the entries in your system drive table and find the type that
   most resembles the head and cylinder parameters of the drive without exceeding these
   parameters.

Performance Specifications

```
   Seek Time (including settling time)      Track-to-Track   4 msec
                                            Average         18 msec
                                            Maximum         40 msec
   Average Rotational Latency                              8.33 msec
   Rotational Speed                           3600 rpm +/- 0.5%
   Data Transfer Rate                             10 Mbits/sec
   MTBF                                        150,000 hours
   Positioner                       Fully balanced rotary voice coil
   Parking                              Automatic park and lock
```

General Functional Specifications

```
   Interface                                        ESDI
   Sectoring (see W1 description, below)        Hard or Soft
   Write Precompensation Start Cylinder             1224*
   Reduced Write Current Start Cylinder             1224*
   Landing Zone                                     1224
   Mounting Plane                             Any orientation
```
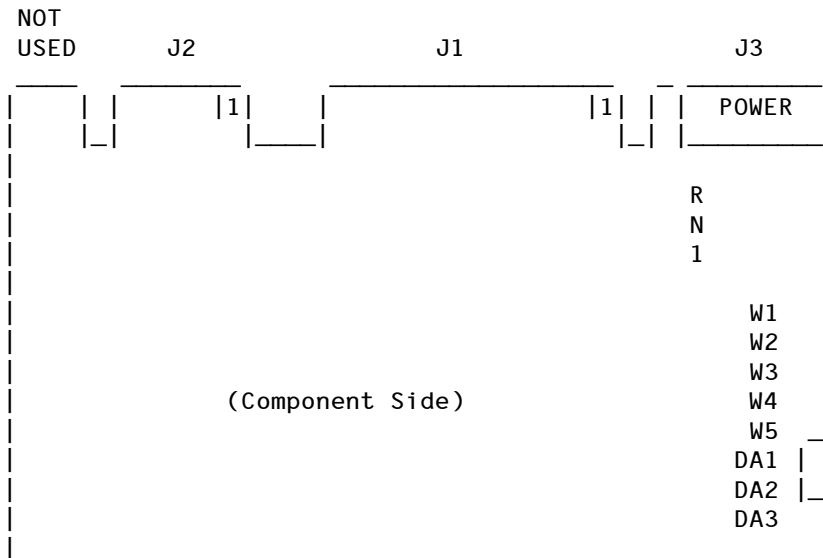
   * These are effectively turned off by specifying a non-existent cylinder. Some
     systems accomplish this by using a value of "-1"

Power Requirements

```
   +12V +/-5%                                       2.0A avg
                                       (4.25A max during start-up)
   +5V +/-5%                                        2.0A avg
   Power dissipation, typical              32 Watts
```

Drive Addressing and Interface Termination

```
    NOT
    USED      J2                    J1                      J3
    ____   _____   _____  _ _____
   |    | | |    |1|    |                |1| | | POWER  |
   |    | |_|    |____|                  |_| |_|_____|
   |                                              |
   |                                    R         |
   |                                    N         |
   |                                    1         |
   |                                              |
   |                                    W1        |
   |                                    W2        |
   |                                    W3        |
   |                                    W4        |
   |            (Component Side)        W5      _|
   |                                    DA1 |
   |                                    DA2 |_
   |                                    DA3   |
   |                                              |
```

RN1 Interface Terminator
  The Interface Terminator factory installed at RN1 will provide proper termination
  for the interface lines. When daisy—chaining multiple drives, leave the terminator
  installed only in the last physical drive on the daisy chain; remove the terminator
  from each of the other drives. In most PC/AT installations, the C: drive is actually
  at the end of the cable and should retain the terminator.

DA1, DA2, DA3 Drive Address Jumpers
  The drive address jumpers are identified as DA1, DA2 and DA3. Address selection is
  binary, as shown in the table below. The ESDI controller's documentation will
  specify the drive address to use.

Drive	Select Jumpers		
Address	DA3	DA2	DA1
1	out	out	in
2	out	in	out
3	out	in	in
4	in	out	out
5	in	out	in
6	in	in	out
7	in	in	in

  "Drive address 0" (no jumper at DA1, DA2 or DA3) is a "deselect" (i.e., no drive
  selected). Drives are factory configured as Drive Address 1. For many multiple drive
  installations, each drive must have a unique address. An exception is that for every
  drive in a PC/AT installation, verify that the only Drive Address is at DA2; move
  the jumper if necessary (the special twisted interface cable that is generally used
  takes care of assigning a unique address to each drive). PC/AT controllers can
  typically support a maximum of two drives.

W5 Selects the Spindle Control Option.
  If W5 is installed, the drive waits for a Start Spindle command (after power is
  applied) to start the spindle motor. If W5 is not installed (the factory default
  configuration), the drive will automatically start the spindle motor at power—on. W5
  is not installed for PC/AT applications.
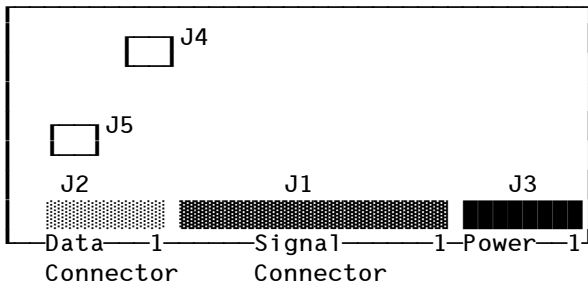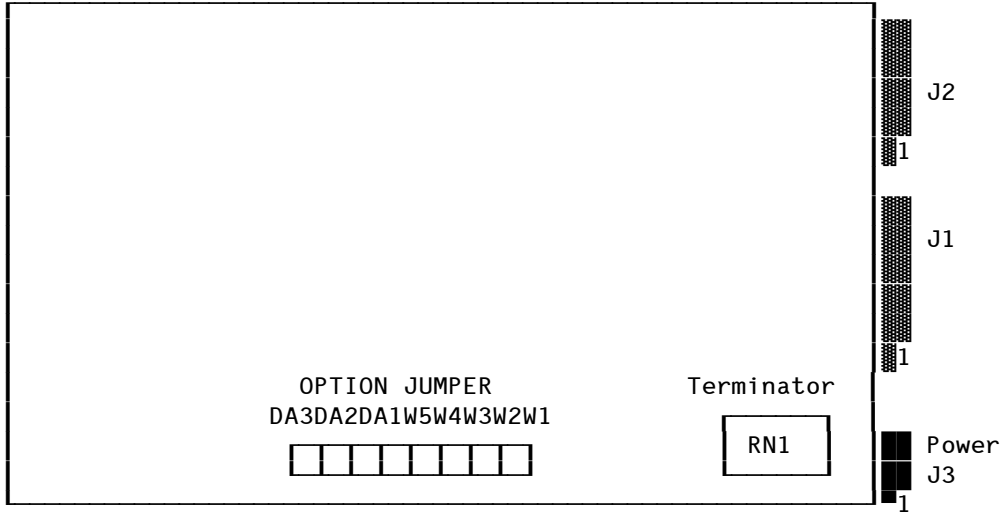
W1 Selects the Sectoring Mode.
  If W1 is installed, the drive operates in the soft—sectored mode. If W1 is not
  installed (the factory default configuration), the drive operates in the hard—sector
  mode. W1 is not installed for most PC/AT in applications.

W2, W3, W4 Sector Size Option
  The number of bytes per sector may be specified using the Set Bytes Per Sector
  command or by selecting a default sector configuration with jumpers W2, W3, and W4
  as follows:

| | Jumpers | | Sectors | Bytes/Sector | |
W4	W3	W2	Per Track	Formatted	Unformatted
out	out	out	35	512	595
* out	out	in	36	512	578
out	in	out	19	1024	1096
out	in	in	9	2048	2314
in	out	out	5	4096	4166
in	out	in	32	512	651
in	in	out	64	256	325
in	in	in	1	20,832	20,832

  * This is the default (factory installed) configuration and is recommended for PC/AT
    applications

OPTION JUMPER
DA3DA2DA1W5W4W3W2W1

Terminator

RN1

J2

J1

Power
J3

1

1

1

J4

J5

J2

J1

J3

Data──1──────Signal──────1─Power──1
Connector   Connector

Jumper setting

OPTION JUMPER

```
┌─────────────────────────────┐
│  o  o  o  o  o  o  o  o      │
│  o  o  o  o  o  o  o         │
└─────────────────────────────┘
            │  │  │  │  │  └── W1 ──── Hard/Soft Sector Option
            │  │  │  │  └──── W2 ┐
            │  │  │  └──────── W3 ├── Default Sector Configuration
            │  │  └─────────── W4 ┘
            │  └────────────── W5 ──── Spindle Control Option
            └───────────────── DA1 ┐
                                DA2 ├── Drive Select
                                DA3 ┘
```
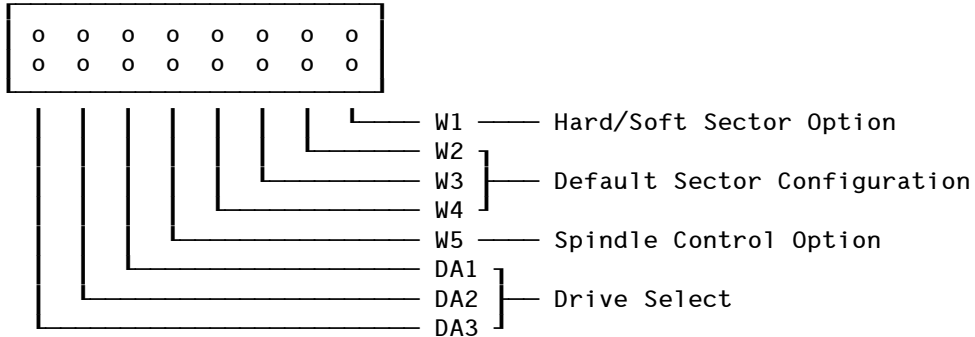
Drive Select DA3/DA2/DA1

Drive Address	Select Jumpers DA3	DA2	DA1
*1	OPEN	OPEN	CLOSED
2	OPEN	CLOSED	OPEN
3	OPEN	CLOSED	CLOSED
4	CLOSED	OPEN	OPEN
5	CLOSED	OPEN	CLOSED
6	CLOSED	CLOSED	OPEN
7	CLOSED	CLOSED	CLOSED

Drive Address 0 is used as a "deselect" (i.e., no drive is selected).

The three Drive Select interface lines are decoded to select the correspondingly addressed drive to the host controller/formatter. In multiple?drive systems, each drive must have its own unique address.

Terminator Pack RN1 provides proper termination for the interface lines. When daisy-chaining multiple 1550 drives, the terminator is installed only in the last drive on the daisy chain.

W1 Hard- or Soft-sectored mode

    CLOSED The drive is configured to operate in the SOFT SECTOR mode. Address mark generation and detection are enabled, and the Sector/Address Mark Found interface signal is used to report address mark found. Sector size is selected by the host controller.

    OPEN The drive is configured to operate in the HARD SECTOR mode. The Sector/Address Mark Found interface signal is used to transmit sector pulses to the host controller. (Factory default)

Sector pulses are derived from the servo disk. The number of sector pulses generated is equal to:

$$INT\left[\frac{20{,}832}{n}\right]$$

Where 20,832 = byte clock derived from servo disk
INT = integer part of
n = the number of unformatted bytes/sector
(82 minimum)

W2/W3/W4 Hard Sector Configuration

Sectors	Bytes/Sector		Jumpers		
	Formatted	Unformatted	W4	W3	W2
35	512	595	OPEN	OPEN	OPEN
36	512	578	OPEN	OPEN	CLOSED
19	1024	1096	OPEN	CLOSED	OPEN
9	2048	2314	OPEN	CLOSED	CLOSED
5	4096	4166	CLOSED	OPEN	OPEN
32	512	651	CLOSED	OPEN	CLOSED
64	256	325	CLOSED	CLOSED	OPEN
1	20832	20832	CLOSED	CLOSED	CLOSED

W5 Spindle Control Option

CLOSED The drive must wait for a Start Spindle command to start the spindle
motor.
OPEN The drive automatically starts the spindle motor at power-on. (Factory
default configuration)
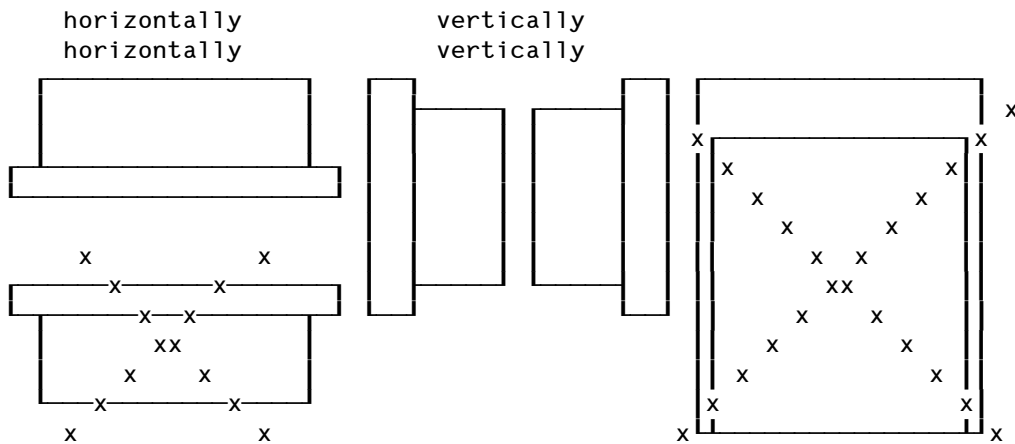

J3   DC Power and pin connector assignments

| 1 2 3 4 |

pin 1   +12 V
pin 2   +12 V Return
pin 3   + 5 V Return
pin 4   + 5 V

J4/J5 Ground Connectors

1/4-inch spade lugs J4 and J5 are provided for grounding.

Notes on installation

Drive mounting

```
   horizontally              vertically
   horizontally              vertically

                                                         x
                                               x                   x
                                                 x             x
                                                   x         x
        x           x                                x     x
          x       x                                    x x
            x   x                                      xx
             xx                                      x     x
           x     x                                 x         x
         x         x                             x             x
                                               x                 x
        x           x                                               x
```

Dimensions and Mounting

Recommended orientation is vertical on either side, or horizontal with the Device
Electronics board down; other mounting orientations may be used provided the ambient
air temperature around the drive is kept at or below 50?C (122?F).

Inasmuch as the drive frame acts as a heat sink to dissipate heat from the unit, the
enclosure and mounting structure should be designed to allow natural convection of
heat around the HDA and outer frame. If the enclosure is small or natural convection
is restricted, a fan may be required.

The 1550 Series uses industry-standard mounting 5"-inch Winchester disk drives (the
same as for 5"-inch flexible disk drives).

Mounting Screws

2 per side 6-32 UNC-2B x 0.14 deep.
4 on bottom 6-32 UNC-2B x 0.20 deep.

Caution: The length of the mounting screws must be such that the screws do not
penetrate the side mounting holes more than .14 inch and the bottom mounting holes by
more than .20 inches. Maximum torque applied to the screws must not exceed 10 in-lbs.

Control Signal Connector J1

J1 is a 34-pin board-edge connector. The signals on this connector control the drive
and transfer drive status to the host controller.

Recommended Cable: 3M Scotchflex 3365/34
Mating Connector: AMP 88373-3 (key slot between pins 4 and 6)

Data Transfer Connector J2

J2 is a 20-pin board-edge connector. The signals on this connector contain read or
write data.

Recommended Cable: 3M Scotchflex 3365/20

Mating Connector: AMP 88373-6 (key slot between pins 4 and 6)

DC Power Connector J3

J3 is a 4-pin, keyed AMP MATE-N-LOCK Connector. This connector supplies DC power (+5V
and +12V) to the drive.

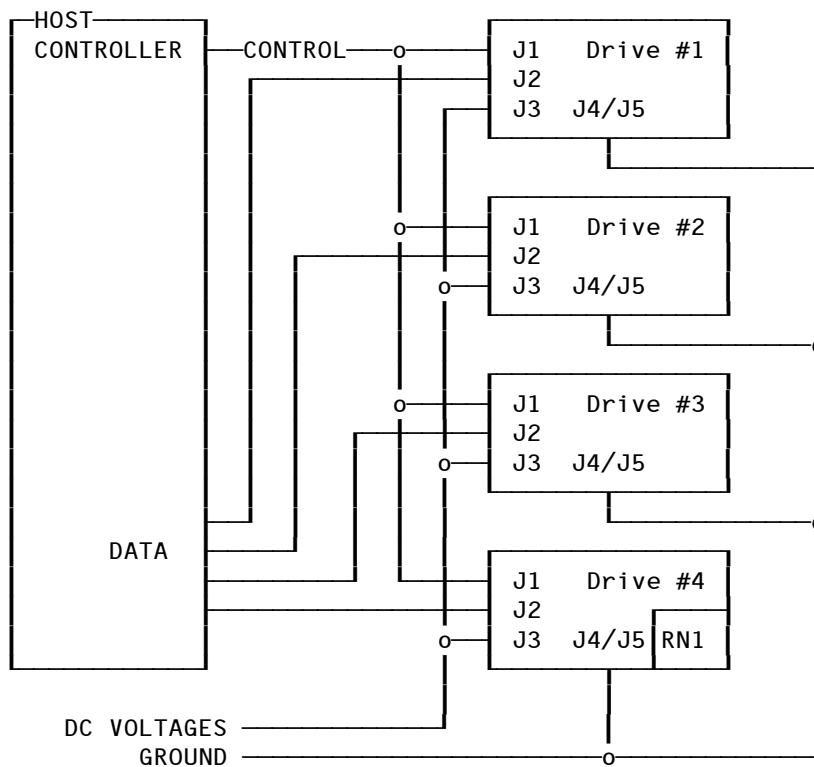Mating Connector: AMP 1-480424-0
          Pins: AMP 350078-4

Suggested Wire Size: 18 AWG

Ground Connectors J4/J5

1/4-inch spade lugs J4 and J5 are provided for grounding; system characteristics
determine the proper ground connection.

Mating Connector: AMP 62187-1 or equivalent.

Daisy-Chaining the 1550 Drive

Interface Terminator RN1 is installed ONLY in the last physical
drive in the control chain.