

TECHNICAL DATA

Specifications

Physical

Size

Length: 9.2"

Height: 6.3"

Depth: 2.4"

Weight

2.5lb.

Environmental

Storage

Temperature: -50°C to 85°C

Humidity: 0 to 95%, non-condensing

Operating

Temperature: -40°C to 72°C

Humidity: 0 to 95%, non-condensing

Mounting

Standard: shelf or back board mounting (includes brackets)

Optional: 19" rack mounting brackets available

Construction

Chassis

Fully enclosed, anodized aluminum

Externally accessible keypad, LEDs and connectors

Electrical

All components mounted on conformal coated, internal PCBs

Power

Voltage

Range: 10 to 36Vdc

Consumption

Typical: 3W

Maximum: 4W (with Modem and Ethernet options)

Isolation

Power

Minimum: 3000Vdc from B and N terminals to chassis and inputs

Sensor Inputs

Minimum: 3000Vdc to any terminal

Sensor to Adjacent Input

Minimum: 2200Vdc

Internal Modem (optional)

Designed to meet FCC part 68 standards

Ethernet Port (optional)

Minimum: 3000Vdc to any terminal

Capacities

Sensor Inputs

8 Dual or 16 Single Sensor (Dual Sensor Inputs can be configured as two Single Sensor Inputs)

Outputs

Relay: 1, form C, rated for 2A at 24Vdc or 1A at 125Vac, maximum switching capacity of 125VA or 60W, service life 1 million electrical (typical)

Event Storage

Standard: 196,432 records, expandable to 429,392 records

Memory Full: 129th day overwrites first day, newest data overwrites oldest data

RS-232 Port

Quantity: 1, for use with a PC

Emulation: ANSI

Baud Rates: 300, 600, 1200, 2400, 4800, 9600, 19,200, 38,400, 57,600, 115,200

Bit Format: N-8-1

Ethernet Port (optional)

Quantity: 1

Type: 10/100 Base-T

Capacities (continued)

Liquid Crystal Display

Characters: 40 total on 2 lines

Character Set: A-Z upper- and lower-case, 0-9, various symbols

Viewing Area: 2.9" by .5"

Front Panel Keypad

Quantity: 20 keys

Keys: 0-9, Browse, Alpha, Setup, Esc, Enter, Decimal, left, right, up, down/-

Sensor Inputs

Input Impedance

Single Ended: 10M Ohms to isolated common voltage

Differential: 100K Ohms (across + and - inputs)

Range

Operating: 0 to 36Vdc

Limit Value: 1 to 24Vdc, user-assigned by Sensor Input

Validation Times

De-bounce preset to 8msec.

Wheel Event Criteria

Positive voltage transition exceeding Limit Value with duration greater than Validation Time

Clock Sync Input

Input Impedance

Minimum: 5K Ohms, opto-isolated

Range

On: 5 to 36Vdc

Off: 0 to 2Vdc

Validation Times

De-bounce preset to 40msec.

Can be used with all MICRO-AIDE clock sync devices

Used to synchronize internal clock to nearest 15-minute mark

Memory

Type

Non-volatile, Event Records and Setup Database are stored in flash memory chip

Storage Longevity

Infinite with power off

Rated for 1 million write operations

Speed Reporting

Operation

Dual Sensor Mode: reports excessive speed per axle; direction is reported

Single Sensor Mode: reports excessive speed per truck; direction is not reported

Date and time stamped Event Record written to memory if Threshold Limit is exceeded

Threshold (speed limit)

Range: 0.00 to 99.99mph

Resolution: multiples of .01mph

User-assigned by Sensor Input

Sensor Distances

Distance: 4" to 600"

Resolution: multiples of .1"

User-assigned by Sensor Input

Accuracy

±.2% (refer to Table 7 on page 65); dependent upon assigned Sensor Distances

.125msec. time stamping of Wheel Events

Connectors

Sensor Inputs

Detachable, screw-down, 8 terminals each, 12 to 22AWG

Terminal Port

DE-9 male, configured as DCE

Power

Detachable, screw-down, 4-position, 12 to 22AWG

Dual B and N terminals

Connectors (continued)

Alarm Relay and Clock Sync Input

Detachable, screw-down, 5-position, 12 to 22AWG

N.O., N.C. and common for relay, + and - for Clock Sync Input

Telephone Line

RJ-11 female

Ethernet Port (optional)

RJ-45 female

Controls

Keypad

20 keys, located on front panel

LCD Contrast Adjust

20-turn potentiometer, located on Processor PCB

Indicators

LCD Panel

Includes LED back lighting for enhanced visibility

Displays numerous command menus for configuring the monitor and retrieving data

LEDs (3)

Power: green

Terminal: green, flashes with send/rcv data

Modem: green, flashes with send/rcv data and ring-in

Internal Clock

Accuracy

Typical: ±1 minute per month (20ppm)

Sync: optically isolated input used to synchronize real-time clock

Resolution

Event Records are time stamped to nearest .001seconds

Operation

Full calendar, auto-adjusted for leap year

Non-volatile with power off

Y2K compliant

Password Protection

Administrative Level

Access to all functions, limit 8 characters

Restricted Level

Access to Event Record and Setup Database viewing only, limit 8 characters

Passcode

Protects against alterations to Setup Database via front panel, limit 8 digits

Internal Modem (optional)

Type

V.34, 33,600 Baud, data compression and error correction

Usage

Remote access via auto-answer operation

Compliance

Designed to meet FCC part 68 standards

Ethernet Port (optional)

Type

10/100 Base-T

Usage

Remote access via Ethernet LAN
Assignable IP Address and Port

Protocol

TCP/IP, Telnet

LED Indicators

Green: link established

Yellow: data activity

MICRO-AIDE reserves the right to make changes, at its sole discretion, to any specifications listed herein.

Recommended Sensor Distances

Speed Range (mph)	Minimum Sensor Distance	
	Allowable Error .2%	Allowable Error .5%
0 to 5	3"	2"
0 to 10	8"	4"
0 to 20	19"	8"
0 to 30	28"	9"
0 to 40	37"	15"
0 to 50	56"	15"
0 to 60	67"	22"
0 to 70	78"	25"
0 to 80	89"	32"
0 to 90	101"	32"
0 to 100	111"	45"

Table 7 - Required Sensor Distance vs. Speed

Tip MICRO-AIDE further recommends that Sensor Distances not exceed 60". This limitation provides for improved performance in reporting irregular wheel motion.

Terminal Port Cable

The following cable is included with every PSM.

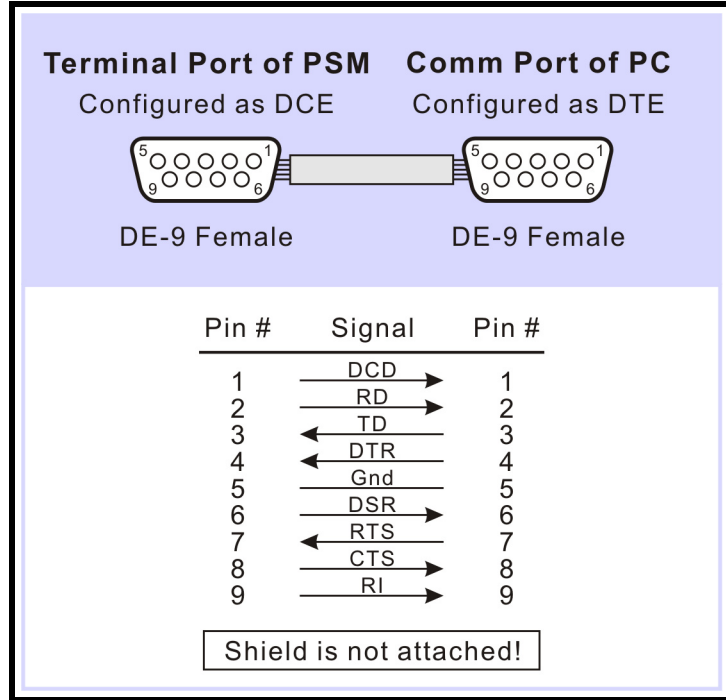


Figure 6 - Terminal Port Cable - Wiring Diagram