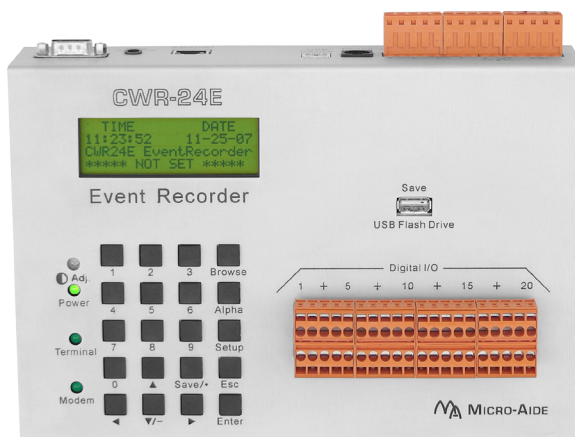


MICRO-AIDE



www.micro-aide.com

CWR-24E EVENT RECORDER



↑
Annoyed and frustrated with record reports that include inaccurate time stamps?

↑
Would you like your maintainers to copy record data directly to a flash drive, without using a PC?

↑
Don't have a PC with an RS-232 port?

CWR-24E ~ the optimum event recording solution for your grade crossing requirements.

FEATURES & CAPABILITIES

- ▶ Designed specifically for crossing and portable study applications
- ▶ 20 Digital and 4 Analog Inputs
- ▶ 8 Virtual and 16 Timer Inputs, all programmable
- ▶ Relay Output, programmable
- ▶ 4 Train Speed Monitors
- ▶ Memory capacity of 307,123 records (expandable to 1,274,611)
- ▶ Records stored for up to 128 days
- ▶ Non-volatile flash memory, no internal batteries required
- ▶ Selectable time zone and automatic Daylight Saving Time adjustment
- ▶ Real-time clock drift of less than ± 8 sec. per month
- ▶ Zero clock drift with GPS Receiver and Ethernet Port options
- ▶ Precise flash rate reporting and measurement
- ▶ Internal temperature reporting
- ▶ RS-232 and USB Device Ports
- ▶ USB Host Port for copying records directly to a flash drive
- ▶ Front panel control via 20-position keypad and 80-character LCD
- ▶ Detachable connectors
- ▶ Minimum 3800 Vdc and 2000 Vac of isolation
- ▶ Options include: GPS Receiver, Ethernet Port, internal modem and expanded memory

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SPECIFICATIONS

Physical

Size (without mounting brackets)
L: 9.5" H: 7.2" D: 3.4"

Weight
2.5 lb.

Operating Environment
Temperature: -40°C to 72°C

Humidity: 0 to 95%, non-condensing

Mounting

Shelf or backboard, includes mounting brackets

Construction

Fully enclosed, anodized aluminum with externally accessible keypad, LEDs and connectors
All components mounted on conformal coated, internal PCBs

Power

Voltage
Range: 9 to 36 Vdc

Consumption

Maximum: 4 W (with GPS Receiver, Ethernet and Modem options)

Isolation

Power Terminals, Digital and Analog Inputs, USB Ports, GPS Rcvr and Ethernet Ports
Minimum: 3800 Vdc to chassis and any terminal

Internal Modem (optional)
Designed to meet FCC part 68 standards

Capacities

Inputs

Digital: 20, all opto-isolated
Analog: 4 total, voltage or current (optional)
Virtual: 8, user assigned
Timer: 16, user assigned

Outputs

Relay: 1, form C

Event Storage

307,123 records, expandable to 1,274,611 records

Liquid Crystal Display

Characters: 80 total on 4 lines
Viewing Area: 2.8" by .8"

Front Panel Keypad

Quantity: 20 keys

Physical Inputs

Input Impedance

Digital: minimum 10K Ohms, opto-isolated
Analog: minimum 10M Ohms

Range

Digital Input - On: 9 to 36 Vdc
Digital Input - Off: 0 to 2 Vdc
Analog DC Voltage: 3 scales, ± 25.5 , $+51.1$, ± 255
Analog AC Voltage: 2 scales, 25.5, 255

Event Validation Times

Digital: .001 to 32.767 seconds, compatible with fixed rate flashing circuits
Analog: fast and slow filter settings

Analog Limit Values

Voltage

High and Low limits: in multiples of .1 V or 1 V

Internal Temperature

High and Low Limits: -67°F to 257°F

Analog Input Accuracy

Typical Vdc: $\pm 1\%$ full scale
Typical Vac: $\pm 1.5\%$ full scale

Virtual Inputs

Any logical association shared by 1 to 4 variables (i.e., Digital, Analog, Timer or Virtual Inputs)

Assigned by defining the state of the Virtual Input for each combination of variable states

Creates standard Event Records

Relay can be controlled by each Virtual Input

Modem (optional) can be enabled to dial out Event Records

Timer Inputs

Programming

Any input can be assigned as a trigger or terminating source

Limit Values

High and Low limits: in multiples of .1 seconds
Range: 0.0 to 999.9 seconds

Reporting

Measured Time is reported in each Timer Input Event Record
Violation of Limit Values are also reported

Train Speed Monitor

Usage

Quantity: 4, separately programmable

Reporting: via standard Event Record

Sensors: wired to 2 spare Digital Inputs, 36" to 99" or 8' to 5280'

Limit Values

5 to 180 mph

Memory

Type

Non-volatile, Event Records and Setup Database are stored in flash memory chip, newest data overwrites oldest data, 129th day over-writes first day

Storage Longevity

Infinite with power off, rated for 100,000 write operations

Ports

RS-232

Quantity: 1, for use with a PC
Baud Rates: 300 to 115,200

USB Host

Compatible with FAT-32 flash drives, can create a text file of Event Record data from any time span

USB Device

Eliminates need for serial comm port, data transfer rates of 960 Kbps

Ethernet (optional)

Type: 10/100 Base-T

Protocols: TCP/IP, Telnet, SNTP-Unicast and -Multicast

Usage: Provides remote or local access via TCP/IP

Data transfer rates of 850 Kbps

User assignable IP Address, Telnet port, sub-net mask, Unicast IP Address

GPS Receiver (optional)

Used to provide precise, real-time clock control, latitude and longitude coordinates

Modem (optional)

Provides remote access, auto-answer

Connectors

Power, Relay, Digital and Analog Inputs

Detachable, tension clamp, 12 to 22 AWG

Terminal Port

DE-9 male, configured as DCE

USB Host Port

USB Type A female

USB Device Port

USB Type B female

Connectors (continued)

Telephone Line

RJ-11 female

GPS Receiver (optional)

MCX female

Ethernet Port (optional)

RJ-45 female

Indicators

LCD Panel

Includes LED back lighting for enhanced visibility
Displays numerous command menus for configuring the recorder and retrieving data

LEDs (3)

Power: green

Terminal: green, flashes with send/rcv data

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

Controls

Keypad

Located on front panel, below LCD

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

LCD Contrast Adjust

Single-turn pot., accessible from front panel

Internal Clock

Accuracy

Typical: ± 8 seconds per month (3 ppm)

Resolution

.001 seconds for all Event Records

Sync

SNTP-Unicast and -Multicast (with Ethernet option)

GPS (with GPS Receiver option)

Operation

Full calendar, auto-adjusted for leap year, non-volatile for 30 days with loss of power

Enable or disable of automatic Daylight Saving Time adjustment

Non-drift, precise control with SNTP and/or GPS Receiver options

GPS Receiver (optional)

Includes PCB and external antenna

PCB

Plugs into mating connector inside recorder

Antenna

Size: Dia 1.8" H .6" (not including mounting screw)

Weight: 2 oz. (less cable)

Operating Temperature: -40°C to 85°C

Mounting: bulkhead mountable to surface less than 3/8" thick

Location: unobstructed skyward orientation, for use outdoors

Password Protection

Administrative Level

Access to all functions, limit 8 characters

Restricted Level

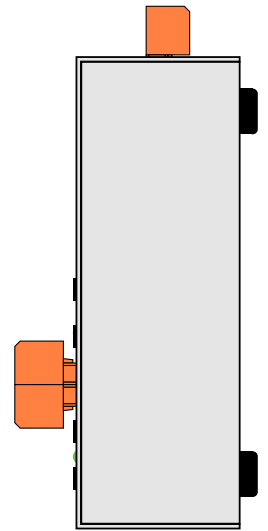
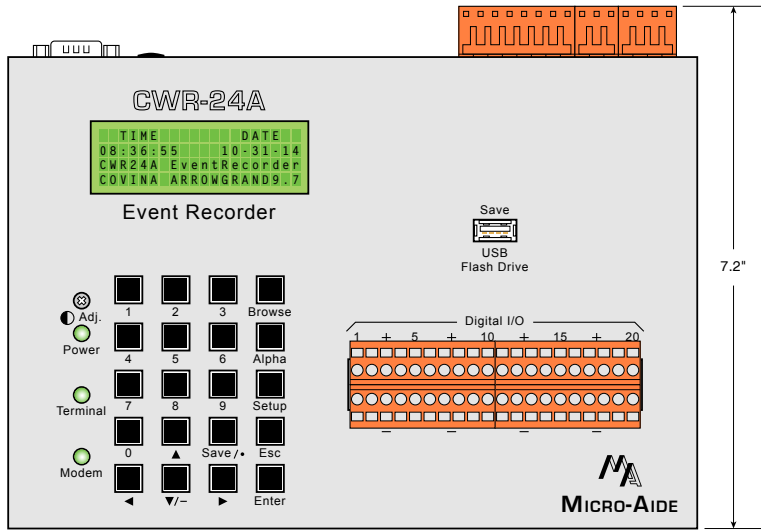
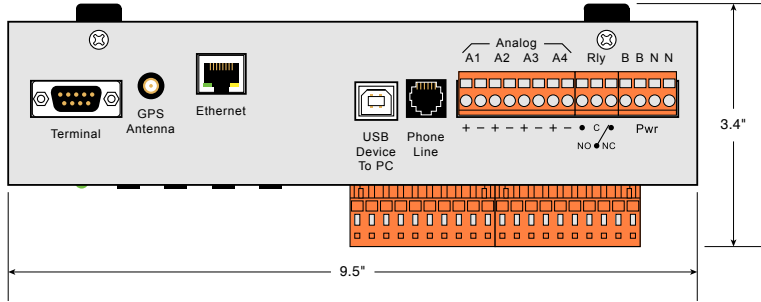
Access to Event Record and Setup Database viewing, limit 8 characters

Passcode

Provides limited alterations to Setup Database via front panel, limit 8 digits

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

DIMENSIONAL DRAWING



MOUNTING DIMENSIONS

With mounting brackets installed

