MICRO-AIDE
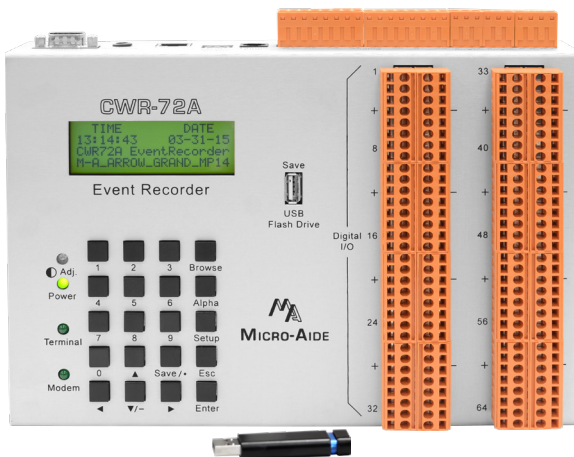
CWR-72A
EVENT RECORDER

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, while not using a PC?

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

CWR-72A *~ the preferred event recording solution for your mid-capacity requirements.*

FEATURES & CAPABILITIES

▶ 64 Digital and 8 Analog Inputs

▶ 32 Virtual and 32 Timer Inputs, all programmable

▶ Dual Relay Outputs, programmable

▶ 4 Train Speed Monitors

▶ Digitally signed and secure Event Record reports

▶ Memory capacity of 234,777 records (expandable to 2,947,289)

▶ 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

▶ Companion product to CWR-24A and CWR-264A

▶ Options include: GPS Receiver, Ethernet Port, internal modem and expanded memory

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Physical
Size (without mounting brackets)
L: 10.4″ **H:** 7.6″ **D:** 3.4″

Weight
3.0 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: 3.8 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: 64, all opto-isolated

Analog: 8 total, voltage or current (optional)

Virtual: 32, user assigned

Timer: 32, user assigned

Train Speed Monitor: 4, user-assigned

Outputs
Relay: 2, form C

Event Storage
234,777 records, expandable to 2,947,289 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 10 KOhms, optically isolated

Analog: minimum 10 MOhms

Range
Digital Input - On: 9 to 36 Vdc

Digital Input - Off: 0 to 1 Vdc

Analog DC Voltage: 3 scales, ±25.5, +51.1, ±255

Analog AC Voltage: 2 scales, 25.5, 255

Analog Current: 2 scales, ± 25.5 Adc, 25.5 Aac

Event Validation Times
Digital: .01 to 327.67 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 Voltage: ±.15 V or ±1.5 V

Typical Current: ±.2 A

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, 50′ 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 4.71 Mbps

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 4.70 Mbps

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

Modem (optional)
Provides remote access, auto-answer

GPS Receiver (optional)
Used to provide precise, real-time clock control, latitude and longitude coordinates

Connectors
Power, Relay, Digital and Analog Inputs
Detachable, tension clamp, 12 to 22 AWG

Terminal Port
DE-9 male, configured as modified DCE

USB Host Port
USB Type A female

USB Device Port
USB Type B female

Connectors (continued)
Telephone Line
RJ-11 female

Ethernet Port (optional)
RJ-45 female

GPS Receiver (optional)
MCX female

Indicators
LCD Panel
Includes LED back lighting for enhanced visibility

Displays numerous command menus for configuring the recorder and retrieving data

Front Panel LEDs (3)
Power: green

Terminal: green, flashes with send / rcv data

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

Ethernet Port LEDs (2 optional)
Green: link established

Yellow: data activity

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) when not synchronized

Resolution
.01 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 option

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
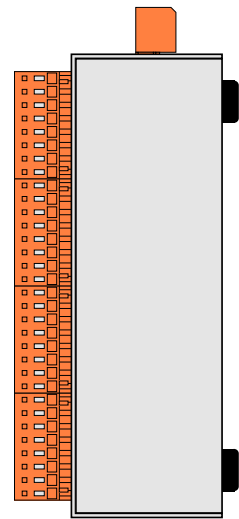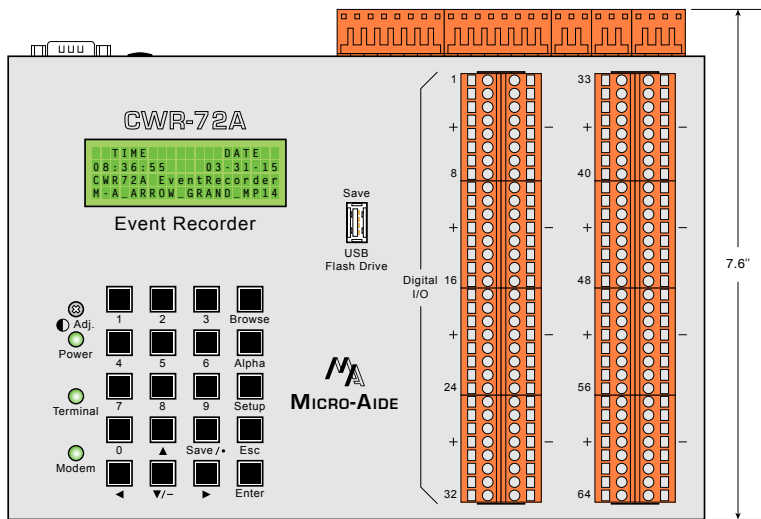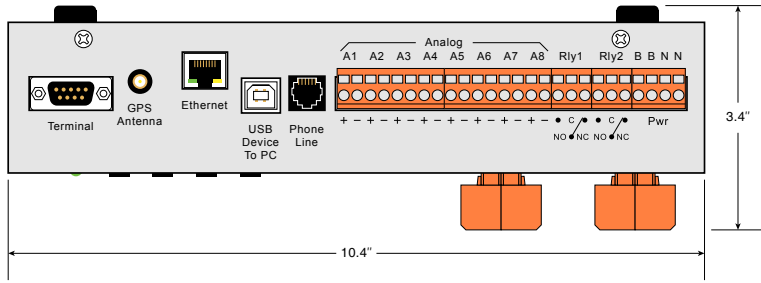Access to all functions, limit 8 characters

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.

MICRO-AIDE

CWR-72A

EVENT RECORDER

With mounting
brackets installed

6.0"

8.5"   9.0"

.5" x .219", 4 places