# MICRO-AIDE
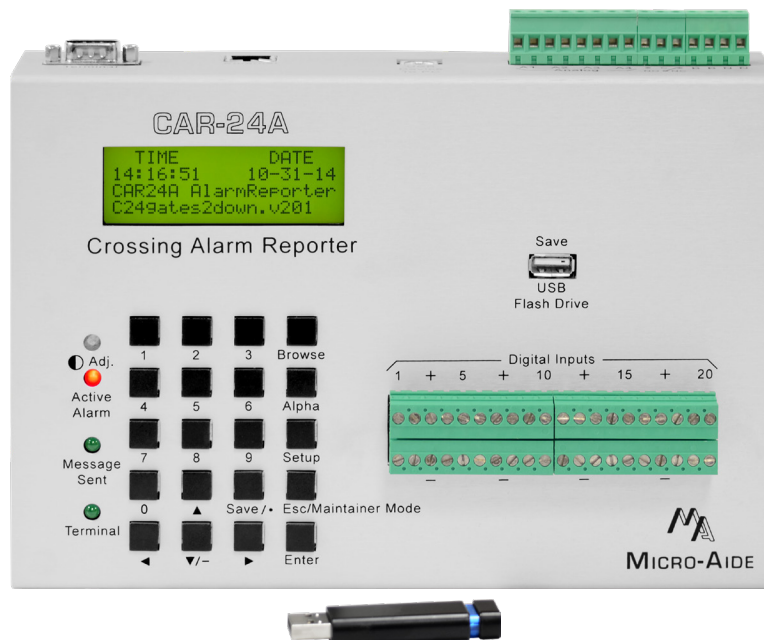
## CAR-24A
### CROSSING ALARM REPORTER



## FEATURES & CAPABILITIES

▶ Automatically detects and reports numerous crossing failures

▶ Reports alarms to a server via a VPN (requires external cellular modem) or LAN

▶ 20 different alarms can be defined to report real-time crossing status

▶ Message forms include state of XR, gates, AC power and battery voltages

▶ Automatic IP and server name resolution via DHCP and DNS

▶ Uses SNTP-Unicast method to provide accurate time stamping

▶ Companion product to MICRO-AIDE's CAR-14A

▶ 20 Digital and 4 Analog Inputs

▶ 8 programmable Virtual Inputs

▶ Includes Event Recorder features from MICRO-AIDE's CWR-24A

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## SPECIFICATIONS

### Physical
**Size** (with mounting brackets)
**L**: 9.5″  **H**: 7.7″  **D**: 3.2″  **Weight**: 2.6 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 W

### Isolation
**Power Terminals, Digital and Analog Inputs, Ethernet Port**
**Minimum**: 3800 Vdc to chassis and any terminal

### Alarms
**Quantity**: 20 total, user-defined
**Types**: Set, Cleared and periodic Health Check

**Definitions**
User-assigned inputs, input states and validation times qualify each Alarm

**Operating Modes**
**Automatic**: messages sent via VPN or LAN using DNS or fixed IP Addressing
**Maintainer Mode**: disables Alarm transmission while crossing is being tested or repaired

### Inputs
**Types**
**Digital**: 20, all opto-isolated
**Analog**: 4, voltage or current (optional)
**Virtual**: 16, user-assigned
**Timer**: 16, user-assigned

**Input Impedances**
**Digital**: minimum 10 KOhms
**Analog**: minimum 10 MOhms

**Range**
**Digital**: 9 to 36 Vdc (On), 0 to 1 Vdc (Off)
**Analog**: 7 scales for Vdc, Vac, Adc, Aac

### Analog Inputs
**Typical Accuracies**: ±.15 V, ±1.5 V or ±.2 A
**High and Low Limits**: user-defined, varies with selected scale

### Alarm and Input Validation Times
**Alarm**: as defined by Alarm Configuration Table, 0 to 99,999 seconds
**Digital**: .001 to 32.767 seconds
**Analog**: fast and slow filter settings

### Ports
**RS-232**
**Quantity**: 1, for use with a PC, set for ANSI terminal emulation
**Baud Rates**: 300 to 115,200
**Bit Format**: 8-N-1

**Ethernet**
**Type**: 10 / 100 Base-T, to cell modem or LAN
**Protocols**: HTTP-Get, TCP / IP, Telnet, SNTP-Unicast, SNTP-Multicast
**User Interface**: provides remote or local access via TCP / IP connection

### Ports (continued)
**USB Host**
Compatible with FAT-32 flash drives, used to save selected Event Records to flash drive
**USB Device**
Eliminates need for serial comm port

### Indicators
**Active Alarm**: red, illuminates when Alarm is active
**Message Sent**: green, illuminates for 5 seconds
**Terminal Mode**: green, flashes with data

### Controls
**Keypad**: 20 keys, provide for front panel access

### Memory
**Capacity**: 302,084 Event Records std.
**Type**: non-volatile for Event Record and Setup Database

### Internal Clock
**Accuracy**
**Typical**: ±8 seconds per month (3 ppm) when not synchronized
**Volatility**: maintains time for 30 days without power

**Sync**
**SNTP-Unicast**: via primary or secondary time servers, once per day at 00:05:00
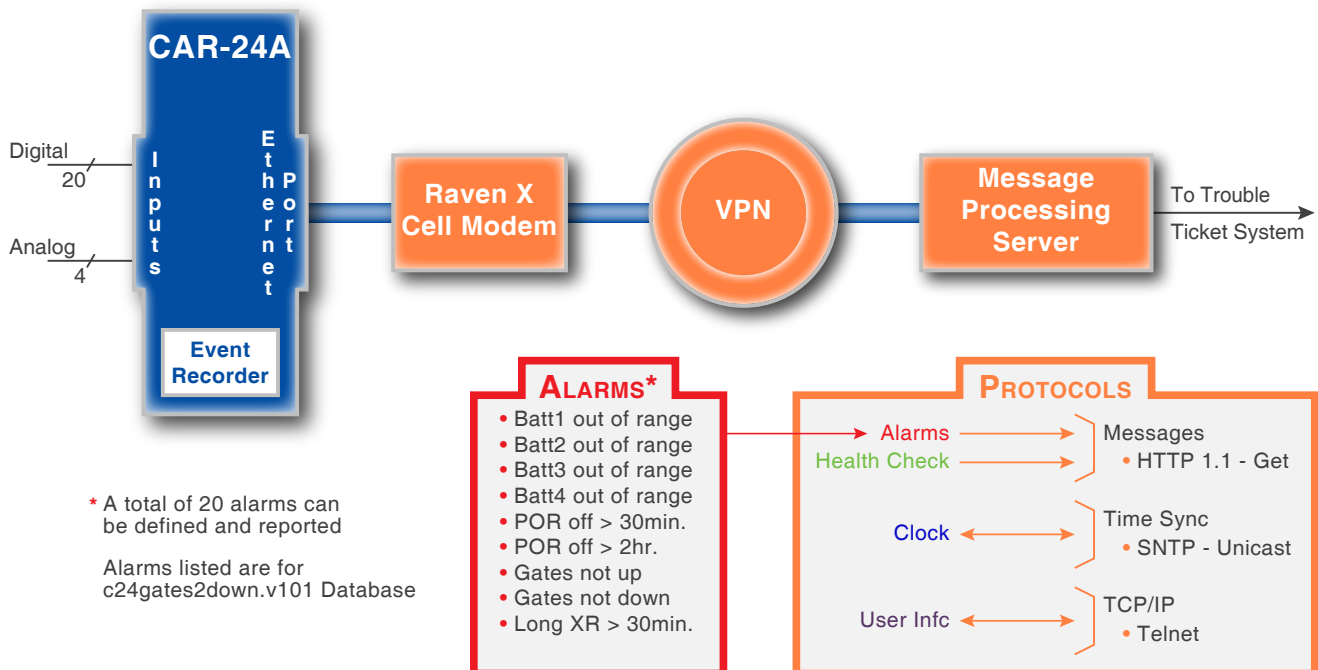**SNTP-Multicast**: per time server schedule

**Operation**
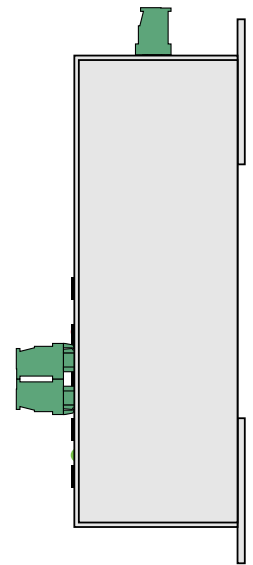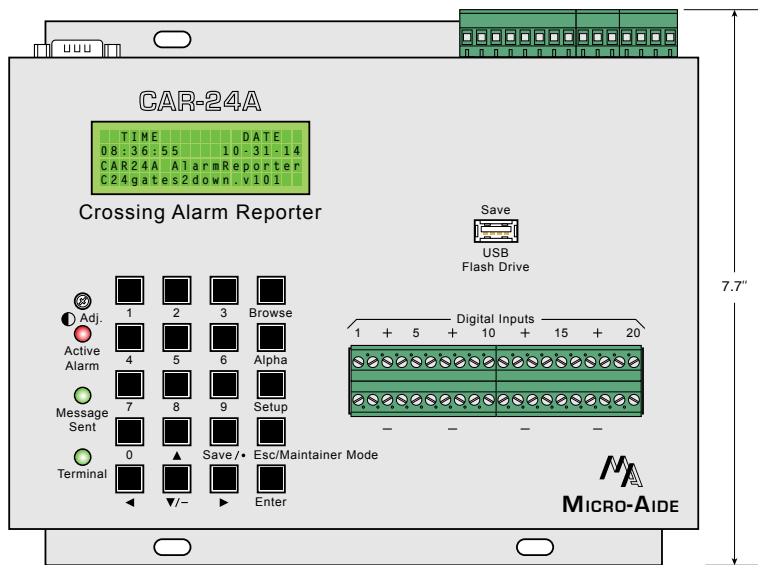**Time Zones**: 7 different North American settings
**Automatic Adjustments**: Daylight Saving Time and leap year

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

## MESSAGE HANDLING



**CAR-24A**

Digital — 20
Analog — 4

Inputs | Ethernet Port

Event Recorder

Raven X Cell Modem → VPN → Message Processing Server → To Trouble Ticket System

\* A total of 20 alarms can be defined and reported

Alarms listed are for c24gates2down.v101 Database

**ALARMS\***
- Batt1 out of range
- Batt2 out of range
- Batt3 out of range
- Batt4 out of range
- POR off > 30min.
- POR off > 2hr.
- Gates not up
- Gates not down
- Long XR > 30min.

**PROTOCOLS**

Alarms
Health Check → Messages
• HTTP 1.1 - Get

Clock → Time Sync
• SNTP - Unicast

User Info → TCP/IP
• Telnet

Terminal

Ethernet

USB
Device
To PC

+ − + − + − + −    Rly    Power

A1  A2  A3  A4   • C •   B  B  N  N
└─── Analog ───┘ NO • NC

3.2"

9.5"

CAR-24A

```
TIME          DATE
08:36:55    10-31-14
CAR24A AlarmReporter
C24gates2down.v101
```

Crossing Alarm Reporter

Save
USB
Flash Drive

Adj.

Active
Alarm

Message
Sent

Terminal

1   2   3   Browse
4   5   6   Alpha
7   8   9   Setup
0   ▲   Save / •   Esc/Maintainer Mode
◄   ▼/−   ►   Enter

Digital Inputs
1  +  5  +  10  +  15  +  20

MICRO-AIDE

7.7"

**MICRO-AIDE**

## CAR-24A
### CROSSING ALARM REPORTER

5.0"

7.0"    7.5"

.5" x .219", 4 places