

Excessive current draw by a track switching machine can be a source of problems on mainline track and elsewhere. This is especially true when the over-current relay operates.

An HCS-4 can help provide a preventative maintenance solution to this problem.



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MICRO-AIDE

HCS-4 HIGH CURRENT SENSOR



Features

- ▶ Includes 4 separate circuits each of which can monitor current into a track switching machine
- ▶ Uses Hall-Effect devices to provide non-intrusive and fully isolated operation
- ▶ 1 to 20 Adc or Aac
- ▶ User adjustable Current Limits
- ▶ Transient filtering is designed for use with most track switching machines
- ▶ Digital design for increased stability and accuracy
- ▶ Output relays can be set for latching or non-latching operation
- ▶ Powered from any 8 to 40 Vdc source

Remote reporting of track switching problems can be performed when an HCS-4 is used with a CAR-24.

SPECIFICATIONS

Physical

Size
Length: 8.3"
Width: 2.9"
Height: 3.1"
Weight: 24 oz.

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

Shelf or desktop

Construction

Chassis
 Fully enclosed, anodized aluminum
 Externally accessible connectors and LEDs
 No inside access required

Electrical

Single PCB with conformal coating, mounted inside chassis

Power

Voltage
Input: 8 to 40 Vdc

Consumption

Maximum 120 mA (at 12 Vdc)

Protection

Isolation
 Minimum 4000 Vdc to ground, infinite duration, to any terminal input

Input Impedance

Infinite to current conductor (fully isolated)

Current Sensors (4)

Range: 1.0 and 20.0 Adc or Aac
Hysteresis: 3% of Limit Value, applies to diminishing current only

Transient Filtering

Each sensor includes hysteresis and a 2.66 second filter that will ignore momentary current fluctuations

Accuracy

The greater of $\pm 2.0\%$ or $\pm 2A$ as compared to 10 times Limit Value

Output Relays (4)

Operation
 Operate when current exceeds Limit Value

Type

Non-latching mechanical, with dual form C contacts, wired in parallel

Contacts

Rated Load: 2 A at 24 Vdc, 1 A at 125 Vac
Minimum Load: 2 mA at 5 Vdc
Maximum Operating Voltage: 60 Vdc, 125 Vac
Maximum Switching Capacity: 125 VA, 60 W
Service Life: 5 million mechanical (minimum), 1 million electrical (typical)

Connectors

Power
 Detachable, screw-down with 6 terminals, 12 to 22 AWG, requires .25" stripped end

Terminals 1 & 2: B, battery positive

Terminals 3 & 4: N, battery negative

Terminals 5 & 6: test inputs

Output Relays (4)

Detachable, screw-down with 4 terminals, 12 to 22 AWG, requires .25" stripped end

Terminal 1: normally open relay contact

Terminal 2: normally closed relay contact

Terminals 3 & 4: relay common

Controls

Potentiometers (4): 20-turn, used to adjust current Limit Values

Test Points (5): female, used to connect DVM when setting current Limit Values

Latching Mode Switches (4): selects latching or non-latching operation of relay outputs

Reset Switch: Pushbutton, resets LEDs and relays

LED Indicators

High Current (4)

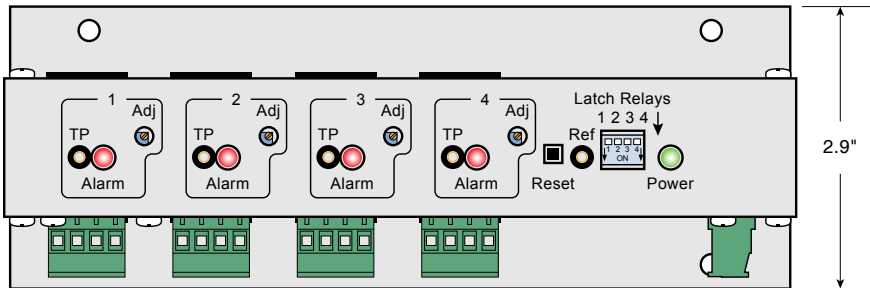
Red: indicates current has exceeded Limit Value

Power

Green: flashes once per second to indicate unit is operational

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

DIMENSIONAL DRAWING



Mounting Holes (4)
 Dia: .219" Spacing: 6.5" x 2.45"

