



ADTECH
Analog-Digital Technology, Inc.

The Adtech ACA series of alarms accepts standard AC current or AC voltage input signals and provides relay contact outputs.

The basic input range is 0-5 amp AC or any voltage of 0-20 VAC to 0-150 VAC and output contacts are rated at 10 amps, 30 VDC, or 250 VAC resistive.

They provide a cost-effective way of protecting equipment for over- and/or under- current or voltage conditions.

An exclusive feature is that the AC current input can be configured to accept either an "average" input (standard) or true rms input response (specify). The true rms feature accepts chopped waveform signals with a 5-to-1 crest factor. This is useful with SCR-switched signals or waveforms other than a sine wave.

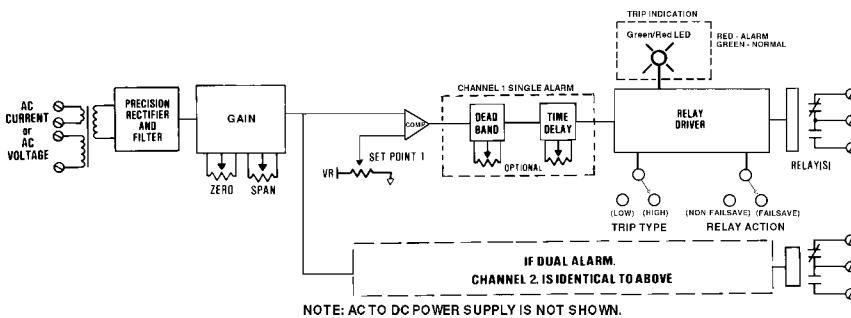
The ACA 140 single alarm has a DPDT output. The ACA 142 dual alarm has a SPDT output per each setpoint and an optional DPDT output per setpoint.

Integral dual color LEDs provide green indication for normal conditions and red indication on alarm per setpoint independent of relay coil power.

The alarms are furnished with the relay power fail-safe (i.e., relay coil energized) regardless of high- and/or low-alarm configurations. You may specify the relays to be non-fail-safe (i.e., relay coil de-energized) or any combination at no extra cost.

The ACA 140 and ACA 142 are supplied with a fixed dead band of 0.5% of span as standard. They are optionally supplied with adjustable dead band of 1 to 100% of input span. Ten-turn calibrated dials are offered as an option for both the setpoint and dead band at a nominal extra cost and are mounted in the "wide-line" (2.75" wide) enclosure.

An adjustable time delay of 1-30 seconds may also be provided as an option. This is useful to prevent false alarms due to signal transient noise-interference.



Features

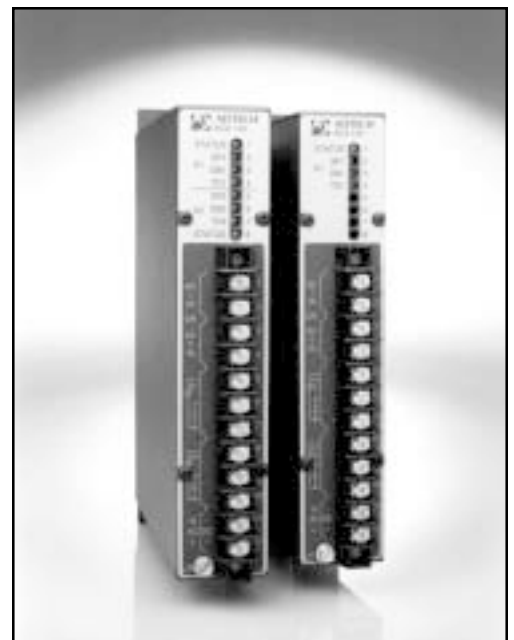
- **AC Current Input:** 0-5 amps
- **Current Overrange:** 20 amps continuous
- **AC Voltage Inputs:** 0-20 to 0-150 VAC
- **Voltage Overrange:** 200% continuous
- **Input Frequency:** 25-400 Hz
- **Repeatability:** $\pm 0.1\%$ of span
- **Isolation:** 1,500 VAC input/output/power
- **Universal Relay Action:** Fail-safe or non-fail-safe for high and low trip
- **Contact Status:** LED indication; green--normal, red--alarm
- **Adjustable Dead Band:** 1-100% of input span--optional
- **Adjustable Time Delay:** 1-30 seconds--optional

AC Current/Voltage Alarms

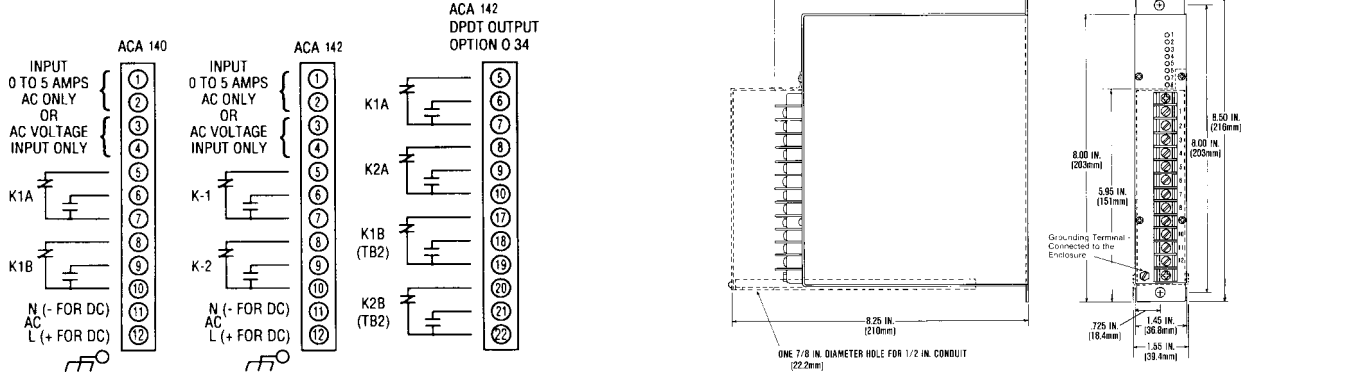
**Model Nos. ACA 140 Single,
ACA 142 Dual**

Typical Applications

- AC motor protection
- AC power failure detection
- AC motor off or running detection
- AC heater off or running detection
- AC heater element failure detection
- AC over-current protection in electrical equipment
- AC under-current trip



Connections/Dimensions



SAFETY CAUTION: If an AC Current Alarm is in service, DO NOT open the connections to terminals 1 and 2. FIRST SHUT OFF the primary current circuit that is being monitored, then disconnect the leads from terminals 1 and 2.

Input/Output

Input Signals: Average or true RMS specify

- * **AC Current:** 0-5 amps AC, burden less than 0.5 VA: average standard, true rms--specify
- * **AC Voltage:** any 0-20 to 0-300 VAC signal, burden less than 1.5 VA
- * **Input Frequency Range:** 25-400 Hz
- * **Input Overrange Capability:** AC Current--20 amps continuous; 250 amps for 1 second. AC Voltage--200% of input specified, continuous.
- * *Zero suppression/elevation to 85% of span.*

Output Signals

- Standard:** ACA 140 one set DPDT contact**
ACA 142 two SPDT contacts**
- ** *Rated 10 amps at 30 VDC or 250 VAC resistive.*
- Optional:** DPDT: dual alarms (Option O 34) Hermetically sealed 2 amp at 28 VDC or 115 VAC resistive (Option O 40 single, Option O 41 dual).
- Note: With Option O 34, the "wide-line" (2.75" wide) housing is supplied.*

Performance

- * **Repeatability:** $\pm 0.1\%$ of span
- * **Trip Point Stability:** Zero and span $\pm 0.008\%/^{\circ}\text{C}$ typical, $\pm 0.02\%/^{\circ}\text{C}$ maximum for a 50°F change from ambient
- * **Trip Adjustment:** 0-100% of span continuously adjustable; blind set: infinite resolution
- * **Fixed Dead Band:** Factory set at 0.5% of span

- * **Adjustable Dead Band:** 1-100% of span or setting (specify) continuously adjustable; blind set: infinite resolution
- * **Power Supply Effect:** $\pm 0.05\%$ for a $\pm 10\%$ power variation
- Isolation:** Input/Output/Power 1,500 VAC, 50/60 Hz
- Response Time:** Less than 400 milliseconds
- Temperature Range:** 0° to 140°F (-18° to 60°C) operating; -40° to 185°F (-40° to 85°C) storage

*Note: All accuracies are given as a percentage of span.
* Ten-turn dials: $\pm 0.5\%$ accuracy, $\pm 0.05\%$ resolution*

Power

- 115 VAC:** 50/60 Hz, 0.7 PF (Standard)
- 12 VDC:** Isolated (Option P8)
- 24 VDC:** Non-isolated (Option P1)
- 24 VDC:** Isolated (Option P2)
- 48 VDC:** Isolated (Option P3)
- 125 VDC:** Isolated (105-140 VDC) (Option P4)
- 230 VAC:** 50/60 Hz, 0.7 PF (Option P5)

Note: All units 3 watts maximum, and a $\pm 10\%$ power variation unless noted.

Mechanical

- Electrical Classification:** general purpose
- Connection:** Barrier terminal strip (3/8" spacing, No. 6 screws)
- Controls:** Multiturn trip set controls, optional dead band & time delay controls, & internal zero & span controls
- Mounting:** Surface mounting standard. See Housings Section for options.
- Weight:** Net Unit: 2.6 pounds (1.18 kilograms); Shipping: 3.0 pounds (1.36 kilograms)

Options

Option Number	Description
O 26 & O 28	Setpoint ten-turn calibrated dials: single and dual
O 27 & O 29	Dead band ten-turn calibrated dials: single and dual
O 30 & 31	Adjustable time delay: single and dual
O 34	DPDT output: dual
O 40 & O 41	Hermetically sealed relays: single and dual
O 46S & O 46D	Adjustable dead band: single and dual
H 10 & H 11	Thin- and wide-line conduit mounting plate and terminal cover
H 13B, H 14B, H 15B	NEMA 4, 7, and 12 enclosures
H 16	PFA 12 high-density, plug-in enclosure

Represented by:



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Ordering Information

- Model number
- Input signal: Specify if current average or rms
- High and/or low relay action
- Relay action, F.S. or non-F.S.
- Prime power with option no.
- Input/output/control(s) options
- Housing and miscellaneous options

Please refer to the Housing and/or Option Section for more specific and detailed information.