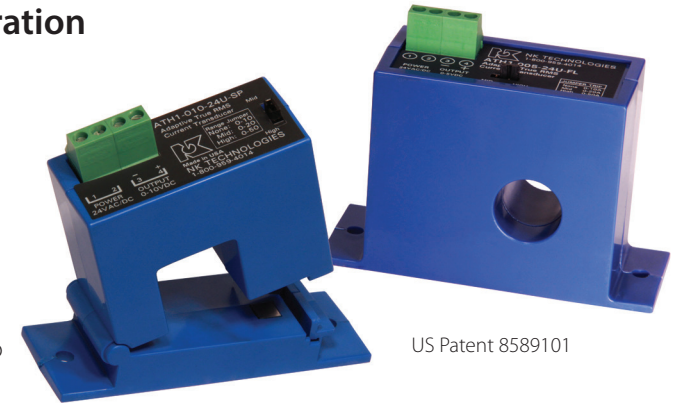
ATH SERIES

AC Current Transducer with Time Integration

ATH Series (patented) AC Current Transducers are the latest innovation from NK Technologies. Monitoring the current or power controlled by silicon-controlled rectifiers (SCRs) can be a challenge, especially the current used by heaters. When used to monitor zero-crossing (burst) fired SCRs, the ATH will provide an output signal directly proportional to the RMS amperage. Zero-crossing fired controls allow current to flow to the circuit for as short of a time period as one cycle, and off for several cycles. Most current sensors will not work well when there is no current present. This capability is important in case a heating element fails but the process continues operating, which could result in scrapped material.



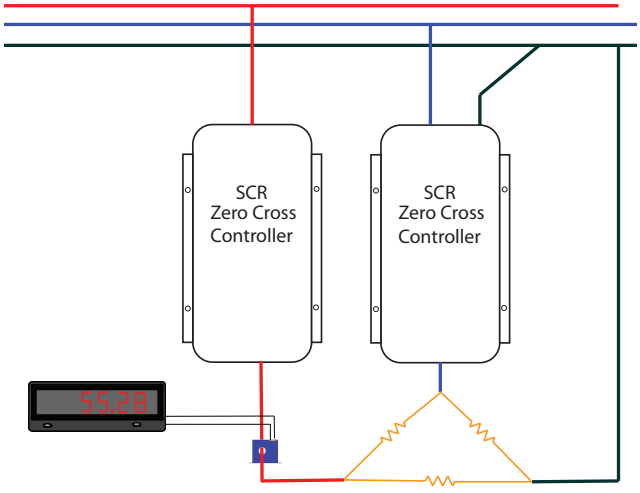
US Patent 8589101

AC Current Transducer Applications

Electrical Heaters

- Faster response than temperature sensors.
- Simplest method to monitor pulsed waveforms.

Burst-Fired Heating Controls



For additional Application Examples, go to www.nktechnologies.com/applications

AC Current Transducer Features

Industry Standard Outputs

- 4–20 mA, 0–5 or 0–10 VDC.
- Compatible with most automation systems.

External Powered

- Split-core models powered with 24 VAC or DC.
- Solid-core models powered with 24 VAC or DC or 120 VAC.

Factory Calibrated

- No need for zero and span adjustment potentiometers.

RMS Output

- Accurate measurement of sinusoidal or pulsed current wave shapes.

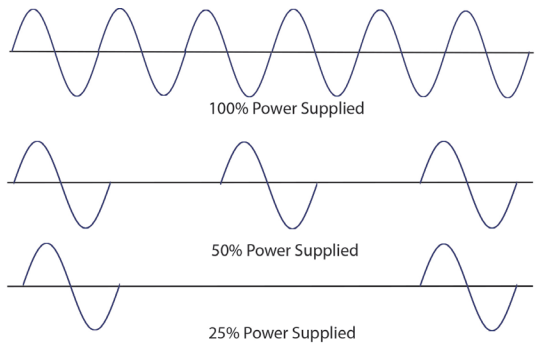
Built-in Mounting Feet

- Simple, two-screw panel mounting or attach with DIN rail brackets (included).*

UL/cUL and CE Approved

- Accepted worldwide.

*For information on the DIN rail accessories kit, see page 147.

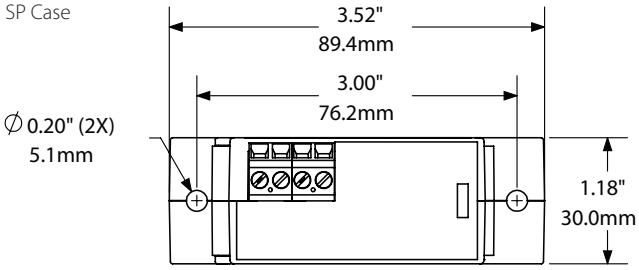


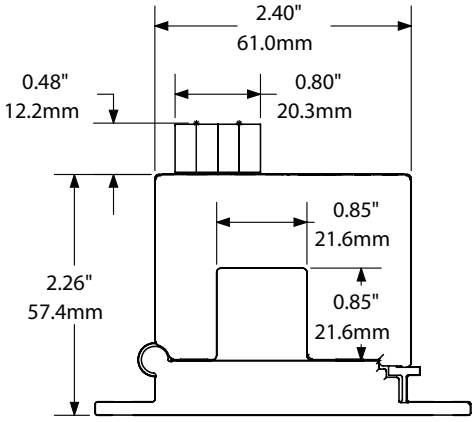
ATH AC current transducers will produce a signal proportional to the current used even when the controller is supplying power in one cycle increments. This is quite common as the "burst-fired" zero crossing switching method produces less harmonic distortion than phase-angle fired controls.

OEMs **Test & Evaluation Units for OEMs**
Free program expedites evaluation process. See page 3 for details.

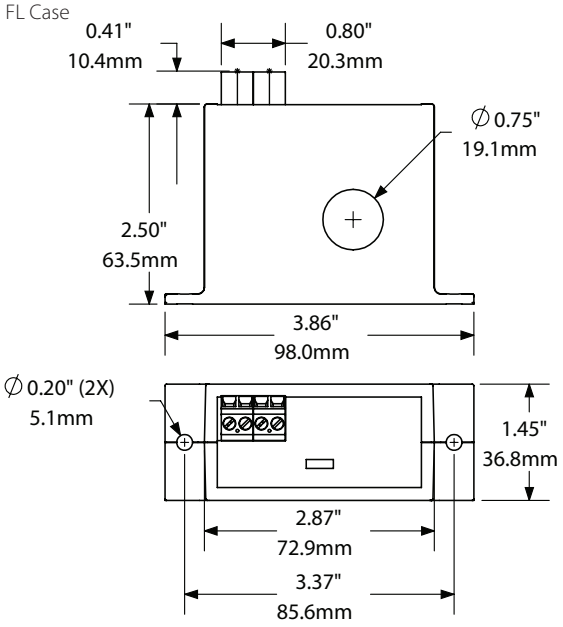
AC Current Transducer Dimensions

SP Case

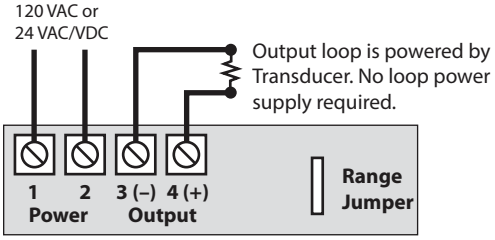




FL Case



AC Current Transducer Connections



AC Current Transducer Specifications

Power Supply	• 120 VAC (+/-10%) solid-core only • 24 VAC/VDC (+/-10%) solid or split-core
Power Consumption	<2 VA
Output Signal	• 4–20 mA (20 mA maximum) • 0–5 VDC (5 VDC maximum) • 0–10 VDC (10 VDC maximum)
Output Loading	• 0–5 or 0–10 VDC: 10 KΩ min. • 4–20 mA: 500 Ω max.
Accuracy	1% FS
Response Time	• <30 ms + duty-period (FL) for 90% step change • <40 ms + duty-period (SP) for 90% step change • <50 ms + duty-period for 100% step change • <400 ms for 100% duty cycle • PWM Cycle Period: 12 ms (min.), 54 sec (max.) • 79 sec for timeout to default period • 206 ms for default period when absence of signal for 79 sec
Frequency Range	40-400 Hz
Isolation Voltage	Tested to 1240 VAC
Case	UL94 V-0 Flammability Rated
Environmental	-4 to 122°F (-20 to 50°C) 0–95% RH, non-condensing
Listings	UL/cUL, CE

AC Current Transducer Ordering Information

Sample Model Number: ATH1-420-24U-SP

AC current transducer, time proportioned, 4-20 mA output, 24 VAC or VDC power supply, split-core case. (DIN rail adapters are included)

(1)	(2)	(3)	(4)
ATH	–	–	–

(1) Range

0	2 and 5 A
1	10, 20 and 50 A
2	100, 150 and 200 A

(2) Output Type

420	4–20 mA
005	0–5 VDC
010	0–10 VDC

(3) Power Supply

24U	24 VAC or VDC
120	120 VAC (FL only)

(4) Case Style

SP	Split-core
FL	Solid-core

3511 Charter Park Drive • San Jose, CA 95136
800.959.4014 • www.nktechnologies.com • sales@nktechnologies.com
NK Technologies