ATH SERIES

AC Current Transducer with Time Integration



US Patent 8589101

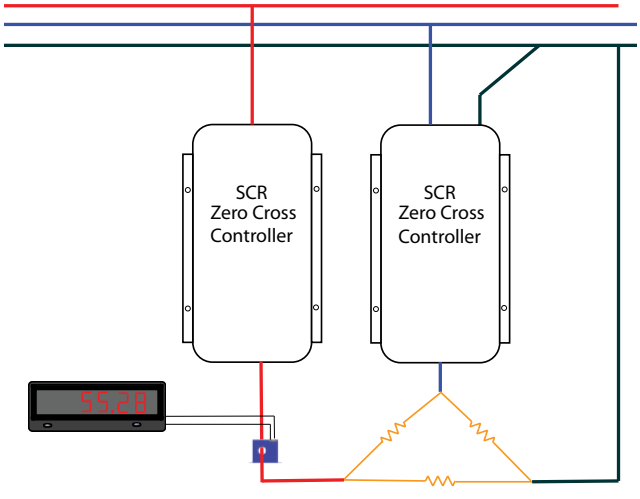
ATH Series (patented) AC Current Transducers are the latest innovation from NK Technologies. Monitoring the current or power controlled by silicon-controlled rectifiers (SCRs) can be a challenge, especially the current used by heaters. When used to monitor zero-crossing (burst) fired SCRs, the ATH will 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.

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 available 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.

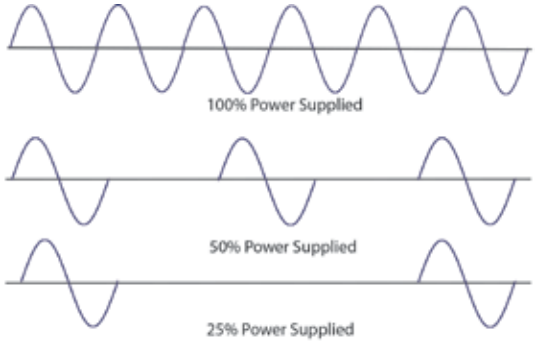
Built-in Mounting Feet

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

UL/cUL and CE Approved

- Accepted worldwide.

*For information on the DIN rail accessories kit, see page 140.



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 witching method produces less harmonic distortion than phase-angle fired controls.

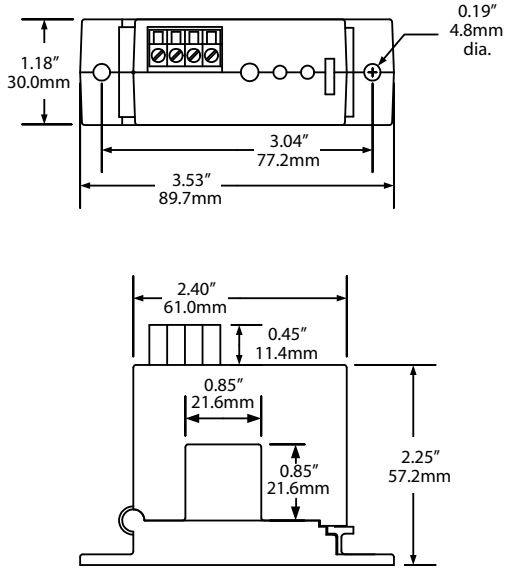
OEMs **Test & Evaluation Units for OEMs**
Free program expedites evaluation process. See page 3 for details.

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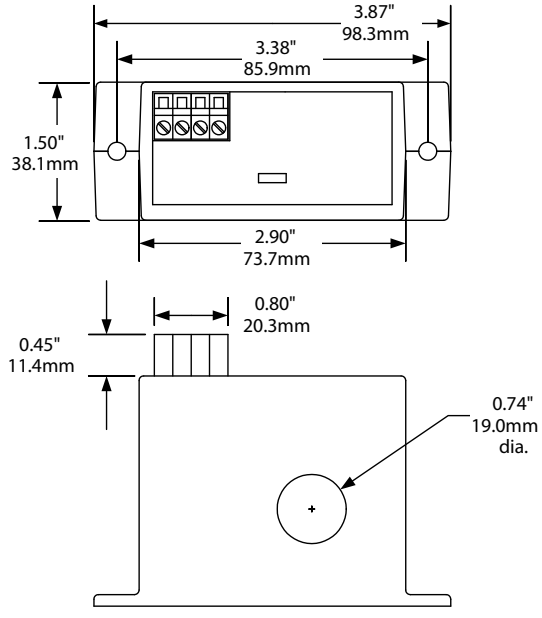
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AC Current Transducer Dimensions

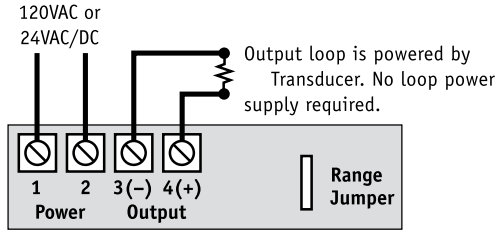
SP Case



FL Case



AC Current Transducer Connections



AC Current Transducer Specifications

Power Supply	• 120 VAC (108–132 V) solid-core only • 24 VAC/DC (22–26 V) solid or split-core
Consumption	<2 VA
Output Signal	• 4–20 mA (20 mA maximum) • 0–5 VDC (5 VDC maximum) • 0–10 VDC (10 VDC maximum)
Output Impedence	• 0–5 or 0–10 VDC: 10 KΩ min. • 4–20 mA: 500 Ω max.
Accuracy	1% FS
Response Time	• 600 ms max., 250 ms at 100% power • PWM Cycle Period: 12 ms (minimum), 54 sec (maximum)
Isolation Voltage	UL listed to 1270 VAC, tested to 5 KV
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 DC 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 DC
120	120 VAC

(4) Case Style

SP	Split-core
FL	Solid-core

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