

ATCR SERIES

AC Current Transducers

ATCR Series AC Current Transducers combine a sensing coil and a True RMS signal conditioner as a matched, factory-calibrated set. The ATCR Series AC Current Transducers are designed to produce an analog 4–20 mA signal proportional to AC current up to 2000 A. The coil opens to pass over the installed conductors. When connected to a controller or data logger, the sensor output is directly proportional to the primary current.



AC Current Transducer Applications

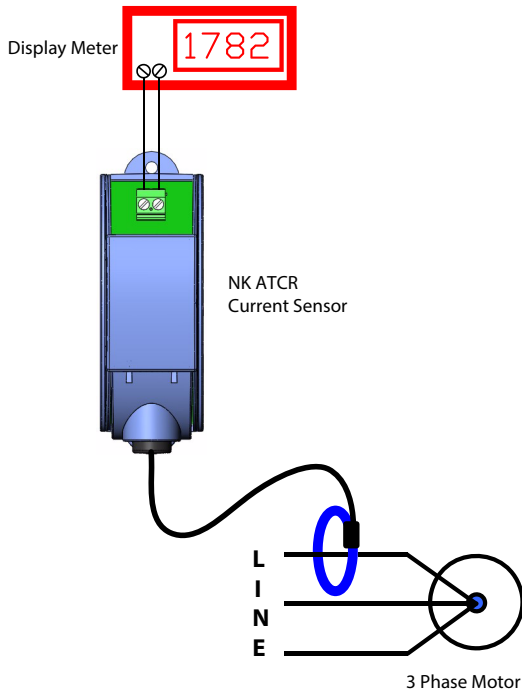
Monitor Large Machines

- Monitoring resistive or inductive load to detect current.
- Industry standard 4–20 mA output for connection to PLC or data loggers.

Flexible Coil Surrounds Conductors Without Disturbing Wiring

- Install over bus bars, or single or multiple conductors easily.
- Fast response to changes in operating conditions.

Two-Wire Loop-powered Output



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

AC Current Transducer Features

True RMS Output

- True RMS technology is accurate on distorted waveforms like VFD or phase angle-fired SC outputs.

Single Range

- No chance of field range selection errors.
- Eliminates zero and span pots.

Isolation

- Output is magnetically isolated from the input for safety.
- Eliminates insertion loss (voltage drop).

Compact DIN Rail or Panel Mounted Case*

- Snap case onto a DIN rail, or mount directly to panel using screws.

UL/cUL Listed and CE Certified

- Accepted worldwide.

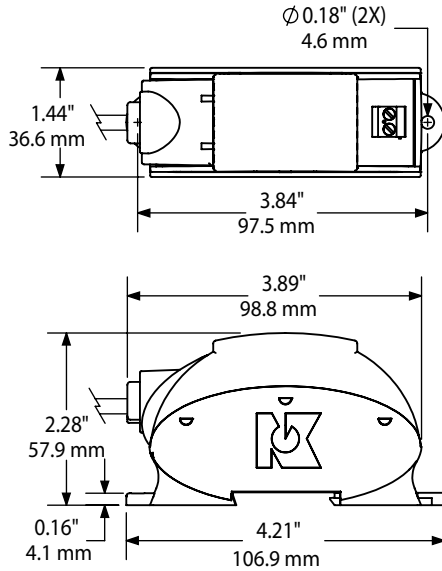
*For information on the DIN rail accessories kit, see page 156.

AC current monitoring of large loads:

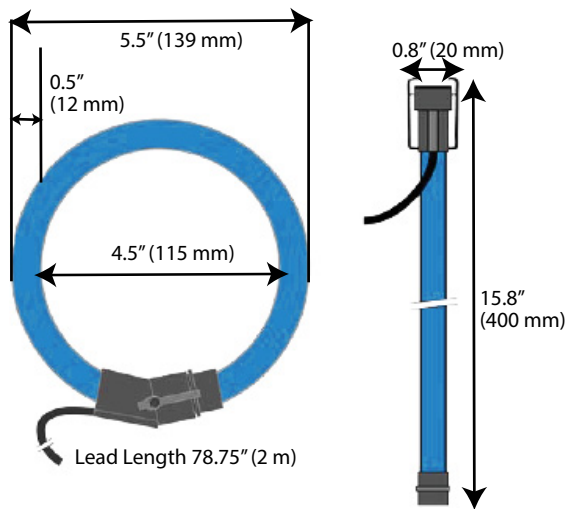
Loads drawing large amounts of power are connected to the supply using large wire or a bus bar. Disconnecting the conductors and threading them through a solid sensing ring or current transformer is difficult and time consuming. With this new design, the sensing is accomplished using a coil without a magnetically permeable core. This allows the installer to pass the coil around the conductors after they are connected without the need to disconnect. The coil is attached to a signal conditioning circuit, and the output signal is powered from the 24 VDC nominal loop voltage. Simple, easy to install, the ATCR Current Sensor can monitor sinusoidal or distorted current waveforms at frequencies to 400 Hz, and is designed for industrial uses.

AC Current Transducer Dimensions

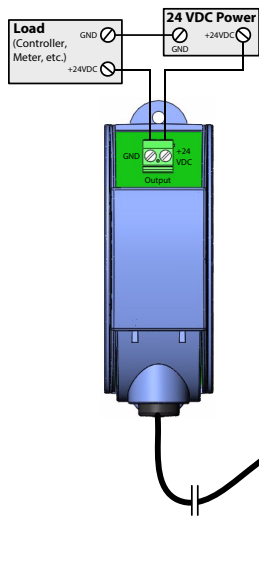
Base



Coil



AC Current Transducer Connections



Notes:
Fingersafe captive screw terminals.
12-22 AWG solid or stranded.
Observe polarity.

AC Current Transducer Specifications



Power Supply	24 VDC nominal, loop powered (12–36 VDC)
Output Signal	4–20 mA loop-powered, True RMS
Output Limit	23 mA
Output Loading	<600 Ω @ 24 VDC
Accuracy	1.0% FS from 10–100% of range
Response Time	600 ms (90% step change)
Frequency Range	40–400 Hz
Isolation Voltage	3.5 kV
Input Range	0 to 500, 1000, 1500 or 2000 A @ 600 VAC max
Case	UL94 V-0 Flammability Rated
Environmental	-4 to 122°F (-20 to 50°C) 0–95% RH, non-condensing
Listings	UL Listed to UL 508 (E342812), CE

AC Current Transducer Ordering Information

Sample Model Number: ATCR1-420-24L-D

True RMS AC current transducer, 500 A range, 4–20 mA output, 24 VDC loop-powered, coil sensor connected to DIN rail mounting case.

ATCR (1) - (2) - (3) - (4)

(1) Full Scale Range

1	500 A
2	1000 A
3	1500 A
4	2000 A

(2) Output Signal

420	4–20 mA
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(3) Power Supply

24L	24 VDC loop-powered
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(4) Case Style

D	Coil connected to DIN rail or panel mounted case
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