Specifications

Power Supply	24 VAC/VDC nominal (19 - 26 VAC/VDC range)
Power Consumption	<1 VA
Output	Open collector transistor, opto-isolated pulse width
Pulse Width	5 kHz: On -- 70-100 µS, Off: Variable 10 kHz: On -- 35-50 µS, Off: Variable
Current	2 mA @ 8 VDC minimum 15 mA @ 24 VDC maximum
Voltage	5-27 VDC
Limits	Capped to 125% of range 05 K model: 6.25 kHz max 10 K model: 12.5 kHz max
Accuracy	1% FS
Isolation Voltage	5 kV
Response Time	100 ms (to 90% of step change)
Line Freq. Range	40-400 Hz
Input Current Range	Field Selectable from 0-200 AC Amps (See Ordering Information)
Case	UL94 V-0 Flammability rated thermoplastic
Environmental	0 to 50°C, 0-95% RH, Non-condensing

Input Maximums

		MAXIMUM INPUT AMPS	
MODEL	**RANGE**	**6 SEC.**	**1 SEC.**
ATQ0	0-2 A	125	250
	0-5 A	125	250
ATQ1	0-10 A	125	250
	0-20 A	150	300
	0-50 A	215	400
ATQ2	0-100 A	300	600
	0-150 A	450	800
	0-200 A	500	1,000

Model Number Key

ATQ 1 - 10K - 24U - SP

CASE STYLE:
SP - Split-Core

POWER SUPPLY:
24U - 24 VAC/VDC

OUTPUT:
05 K - 0-5 kHz
10 K - 0-10 kHz

RANGE:
0 - 0-2 or 5 Amps
1 - 0-10, 20 or 50 Amps
2 - 0-100, 150 or 200 Amps

SENSOR TYPE:
ATQ - AC current transducers, average responding

Know Your Power



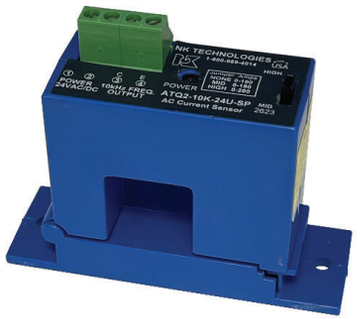
Other NK Technologies Products Include:
AC & DC Current Transducers and Switches
1ϕ & 3ϕ Voltage and Power Transducers
Current Transformers (CTs)
Ground Fault Protection Relays

NK Technologies

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INSTRUCTIONS

US Patent:
6566855



ATQ SERIES
AC Current Transducers
Frequency Output, Avg. Responding

Quick "How To" Guide

1. Route monitored wire through aperature, mounting using two screws and mounting feet.
2. Connect 0-5 kHz/0-10 kHz output to PLC (or other meter device) using 14-18 AWG copper wires. Ensure polarity is correct for Sink or Source connection (see "Output Wiring" section) and programmed PLC settings match recommended bandwidths.
3. Power supply must be 24 VAC/VDC. Connect using 14-18 AWG copper wires. Power LED should be on whenever power is connected to the unit.
4. Choose input range by positioning the Range Jumper. Facing the 3-pin jumper, position jumper over top two pins for High range, bottom two pins for Mid range, and no jumper for Low range.
5. With current flowing through unit, check for proper operation by confirming frequency output is proportion to input current.

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Description

ATQ Series transducers combine a current transformer and a signal conditioner into a single package. Instead of the typical 4-20 mA or 0-10 V analog output, the ATQ Series provides a frequency output that is compatible with a PLC's high-speed counter inputs. This allows an automation system equipped with only Digital Inputs (DIs) to accept and process an analog value using frequency instead of the usual 4-20 mA or 0-10 V standards.

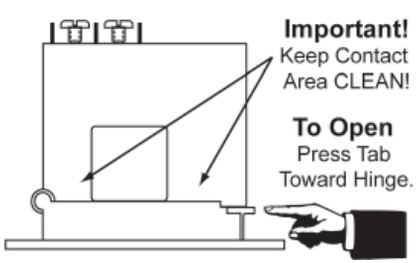
ATQ Series provide an "Average Responding" output. Select ATQ Series for constant speed motors or On/Off loads such as lamps or heaters.

Installation

ATQ Series transducers work in the same environment as motors, contactors, heaters, pull-boxes, and other electrical enclosures. They can be mounted in any position or hung directly on wires with a wire tie. Just leave at least one inch (25 mm) distance between sensor and other magnetic devices.

Run wire to be monitored through opening in the sensor.

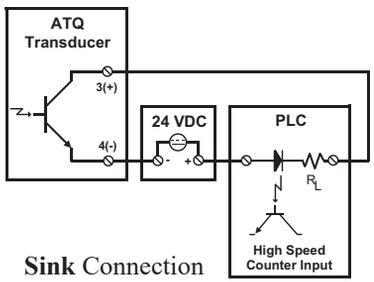
Press the tab in the direction as shown to open the sensor. After placing the wire in the opening, press the hinged portion firmly downward until a definite click is heard and the tab pops out fully.



KEEP SPLIT-CORE SENSORS CLEAN.
Silicone grease is factory applied on the mating surfaces to prevent rust and improve performance. Be careful not to allow grit or dirt onto the grease in the contact area. Operation can be impaired if the mating surfaces do not have good contact. Check visually before closing.

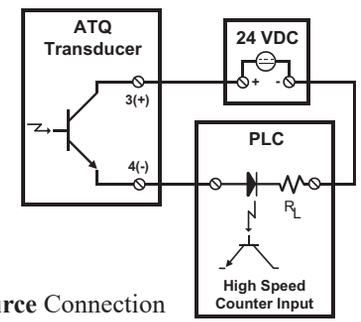
Output Wiring

Connect output wiring from PLC or other meter device to the sensor. Use 14 to 18 AWG copper wire and tighten terminals to 4 inch-pounds torque. Terminals are designated as follows: terminal 3 "C" for collector, terminal 4 "E" for emitter. Be sure to observe output polarity for a SINK or SOURCE connection (diagrams below).



Sink Connection

Output Connection Notes:
- Captive screw terminals, 14-18 AWG solid or stranded.
- Open Collector transitor output, opto-isolated.
- See label for ranges & jumper positions.
- Observe Polarity.



Source Connection

Power Wiring

Connect the power wires to Terminals 1 & 2. Use 14-18 AWG copper wire and tighten terminals to 4 inch-pounds torque. The power input is not polarity sensitive. The POWER LED should be lit to indicate whenever control power is supplied to the unit.

Power Connection Note:
Be sure that the power applied matches the nominal voltage shown on the label (24 VAC/VDC)! Higher voltages may cause damage to the unit.

Range Select

ATQ Series transducers feature field selectable ranges. The ranges are factory calibrated, eliminating time consuming and inaccurate field setting of zero or span.

1. Determine the normal operating amperage of your monitored circuit.
2. Select the range that is equal to or slightly higher than the normal operating amperage.
3. Place the range jumper in the appropriate position. (Note: ATQ0 has only two ranges corresponding to "High" or "Low" jumper positions.)

Trouble Shooting

1. Sensor has no output
- A. Control Power is not connected or the right voltage *Check power supply voltage and connections*.
- B. Output Polarity is not properly matched. *Check and correct wiring polarity.*
- C. Split-Core models: The core contact area may be dirty. *Open the sensor and clean the contact area.*

2. Output signal too low
- A. The jumper may be set in a range that is too high for current being monitored. *Move jumper to the correct range.*
- B. The load current is not sinusoidal.
- C. Monitored current is below minimum required. *Loop the monitored wire several times through the aperture until the "sensed" current rises above minimum. Sensed Amps = (Actual Amps) x (Number of Loops). Count loops on the inside of the aperture.*

3. Sensor is always at 0 Hz
- A. Monitored load is not AC or is not on. *Check that the monitored load is AC and that it is actually on*.

4. Output signal is always at maximum kHz
- A. The jumper may be set in a range that is too low for current being monitored. *Move jumper to the correct range*.

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