

Specifications

Output	Open collector transistor, opto-isolated pulse width
Pulse Width	5kHz: On -- 90-100 μ S, Off: Variable 10kHz: On -- 45-50 μ S, Off: Variable
Current	2mA @ 8 VDC minimum 15mA @ 24 VDC maximum
Voltage Limits	5-27 VDC Capped to 125% of range 05K model: 6.25kHz max 10K model: 12.5kHz max
Accuracy	1% FS
Isolation Voltage	5kV (Input to Output, Power to Output)
Response Time	100 mS (to 90% of step change)
Input Freq. Range	10-400Hz
Input Current Ranges	Field Selectable from 0-200 AC Amps (See Ordering Information)
Power Supply	24 VAC/VDC nominal (19.2 - 26.4 VAC/VDC range)
Power Consumption Case	<1 VA UL 94V-0 Flammability rated thermoplastic
Environmental	-20 to 50 Deg. C, 0-95% RH, non-condensing

Input Maximums

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

Model Number Key

ATQ	1	- 10K	- 24U	- SP
				CASE STYLE
				SP- Split Core
				POWER SUPPLY:
				24U- 24VAC/DC3
				OUTPUT:
				05K 0-5 kHz
				10K 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 Operated Switches & Transducers
Ground Fault Sensors
1 ϕ & 3 ϕ Power Transducers
Current & Potential Transformers (CTs&PTs)

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INSTRUCTIONS

PATENTED



ATQ SERIES

AC Transducers

Frequency Output, Avg. Responding

Quick "How To" Guide

1. Route monitored wire through aperture, mount using two screws and mounting feet.
2. Connect 0-5Hz/0-10Hz 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 24VAC/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.

Description

ATQ Series transducers combine a current transformer and a signal conditioner into a single package. This provides higher accuracy, lower wiring costs, easier installation and save valuable panel space. The frequency output is compatible with high speed counter inputs. This allows an automation system equipped with only Digital Inputs (DIs) to accept and process an analog value.

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

Installation

For All Versions

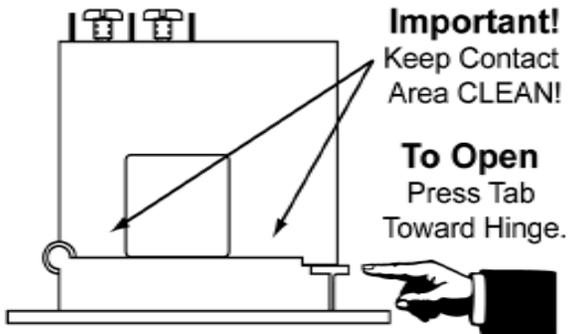
Run wire to be monitored through opening in the sensor.

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 (25mm) distance between sensor and other magnetic devices.

Split-Core Versions (SP Suffix)

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.

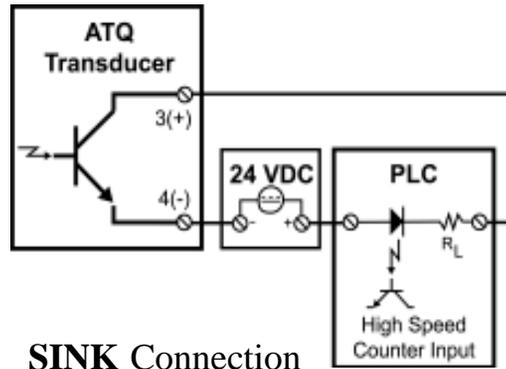
KEEP SPLIT-CORE SENSORS CLEAN.



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

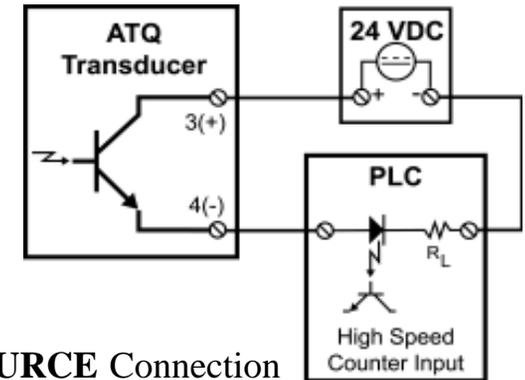
Connect output wiring from PLC or other meter device to the sensor. Use 14 to 18 AWG copper wire and tighten terminals to 4 inch-pounds torque. Terminals are designated as follows: terminal 3 “C” for collector, terminal 4 “E” for emitter. Be sure to observe output polarity for a SINK or SOURCE connection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



SINK Connection

Output Connection Notes:

- Captive screw terminals, 14-18 AWG solid or stranded.
- Open Collector transistor 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 (24VAC/VDC)! Higher voltages may cause damage to the unit.

Range Select

ATQ Series transducers feature field selectable ranges. These 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. $Sensed\ Amps = (Actual\ Amps) \times (Number\ of\ Loops)$. 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 Hz

- A. The jumper may be set in a range that is too low for current being monitored. Move jumper to the correct range.