

## Specifications

Power Supply	24VAC/DC External Power (22-26VDC), <2VA <i>(Note: Output and power supply negatives are not isolated).</i> Use class 2 power supply
Voltage Measurement	15, 25, 50, 60, 120, 150, 240, 300, 400, 500 and 600VAC or DC
Frequency Range	0 - 5KHz
Output	4-20mA (capped at 31mA max) 0-5VDC (capped at 7.75VDC) 0-10VDC (capped at 11.5VDC)
Response Time	500 ms (to 90% value)
Accuracy	< 1% Full Scale
Loading	4-20mA: < 400 ohm 0-5/10V: >50K ohm
Isolation Voltage	2500 Volts
Operating Temp.	-20°C to 50°C (surrounding sensor)
Enclosure	UL94V-0 Rated
Environmental	-4 to 122 ° F (-20 to 50° C),0-95% RH Pollution Degree 2 Altitude to 2000 meters
Listings	Designed to meet UL/cUL, CE

### For products intended for the EU market, the following is applicable to the CE compliance of the product:

The VTU series comply with EN 61010-1 CAT III 600V max measurement category. Use 24 V input power and fuse at 5 amps. Power source overvoltage category I as defined per EN 61010-1

#### Warning! Risk of danger



Safe operation can only be guaranteed if the transducer is used for the purpose for which it was designed and within the limits of the technical specifications. When this symbol is used, it means you must consult all documentation to understand the nature of potential hazards and the action required to avoid them.

#### Warning! Risk of electrical shock



When operating the transducer certain parts may carry hazardous live voltage (e.g. primary conductors, power supply). The transducer should not be put into operation if the installation is not complete.

## Model Number Key

VTU A - 420 - 24U - DIN

#### CASE STYLE:

DIN - DIN rail compatible

#### POWER SUPPLY:

24U - Nominal 24 VAC/DC

#### OUTPUT:

420 - 4-20mA

005 - 0-5VDC

010 - 0-10VDC

#### MONITORED VOLTAGE RANGE:

A - 15V

B - 25V

C - 50V

D - 60V

E - 120V

F - 150V

G - 240V

H - 300V

I - 400V

J - 500V

K - 600V

#### SENSOR TYPE:

VTU - AC/DC Voltage Transducers

## Know Your Power



#### Other NK Technologies Products Include:

AC & DC Current Transducers

AC & DC Current Operated Switches

1 $\phi$  & 3 $\phi$  Power Transducers

Current & Potential Transformers (CTs & PTs)



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NK Technologies

# INSTRUCTIONS



## VTU SERIES

AC/DC Voltage Transducers  
Ranges 15, 25, 50, 60, 120, 150,  
240, 300, 400, 500 and 600 Volts  
4-20mA, 0-5/10VDC Outputs

### Quick "How To" Guide

1. Ensure correct sensor model was chosen for Monitored Voltage of application.
2. Mount the sensor to a DIN rail using integrated mounting clip on backside of transducer.
3. Connect monitored voltage (5) & (6) and output wiring using 22-14 AWG copper wires insulated to 75/90°. Refer to Specifications section for voltage and impedance recommendations.
4. Connect 24VAC or DC power supply fused to 5 amp to term. 3-4. Use twisted pair for CE compliance.

Do not connect power and signal together.

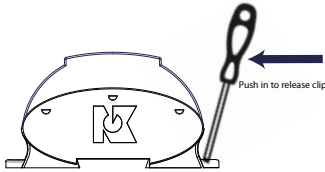
## Description

VTU Series Voltage Transducers are designed to monitor AC or DC voltage and detect conditions where supply voltage is above or below normal. Detecting such conditions helps users to avoid problems commonly associated with voltage irregularities such as motor overheating, brownouts and conductor failure or poor connections. The VTU is available with 4-20mA, 0-5 or 0-10 VDC output options.

## Installation

VTU transducers feature a 35mm wide DIN rail compatible enclosure and are typically located in the same environment as motors, contactors, heaters, pull-boxes, and other electrical enclosures.

**To mount on DIN rail:** Orient transducer so that line voltage terminals L1 and L2 are upright/on top of unit and snap securely onto DIN rail. To remove, insert small screwdriver into the lower mounting hole of the spring loaded clip, and push the handle end of the screwdriver toward the sensor base to release the tension on the rail.



**To mount using screws:** Insert screws and mount to back plane or other suitably flat surface.

## Monitored Voltage Wiring Connection

**CAUTION: TO AVOID ANY POTENTIAL FOR SHOCK OR SAFETY HAZARD, ENSURE LINE VOLTAGE IS DISCONNECTED AT SOURCE BEFORE WIRING TO UNIT.**

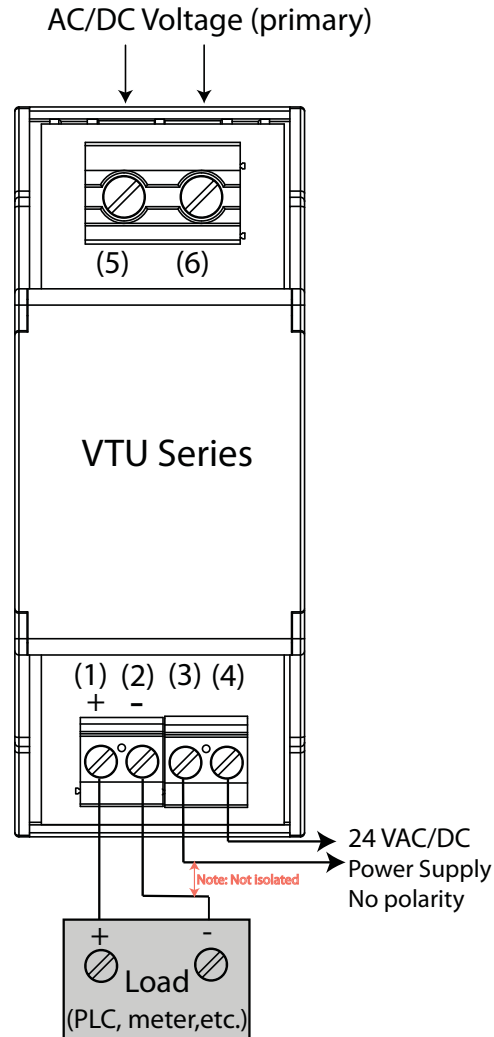
Connect input voltage to be monitored to terminals (5) and (6) on transducer using up to 10 AWG copper wires and tighten terminals to 7 inch-pounds torque.

**Do not connect the power supply and signal together. There is no isolation between power and signal.**

**Use twisted pair for power supply conductors for full compliance with CE directives.**

## Output Wiring

Connect control or monitoring wires to the sensor terminals 1 and 2. Use up to 14 AWG copper wire insulated to 75/90°C and tighten terminals to 7 inch-pounds torque. Observe polarity, terminal 1 is the positive output, 2 is negative.



## Troubleshooting Tips

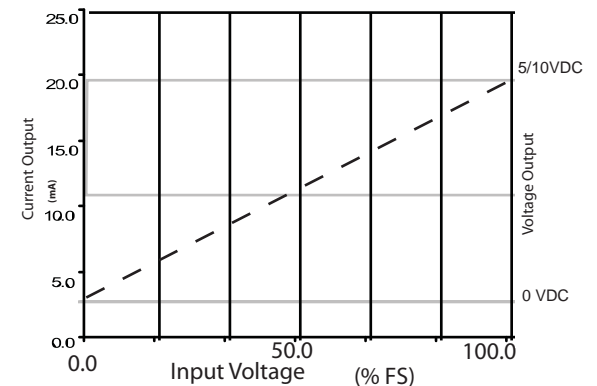
- 1. Transducer has no output**
  - A. Power supply is not properly sized. *Check power supply voltage and output rating. Each transducer requires less than 2VA to operate.*
  - B. Output polarity is not properly matched. *Check and correct wiring polarity.*
- 2. Output Signal Too Low or Too High**

Transducer model improperly sized for application. *Determine the normal operating voltage of your monitored circuit and ensure transducer selected is equal to or slightly higher than the normal operating voltage.*
- 3. Transducer output is always at 4mA (or zero voltage)**

Primary circuit is not on. *Check that the monitored circuit is actually energized.*
- 4. Transducer output is always at 20mA (or 5/10VDC)**

Voltage is higher than transducer range. *Select a higher range product.*

## Transducer Output vs. Input Voltage



Note: Voltage output will be linear in the same manner, with zero at zero primary voltage and 5 or 10 VDC at the full range measured voltage.