

# VTR SERIES

## AC Voltage Transducers

VTR Series AC Voltage Transducers are high-performance True RMS transducers for sensing voltage in single- and three-phase installations. Applicable on circuits of 120 V, 240 V, 480 V and 600 V, the VTR Series voltage transducers provide a fully isolated, 4–20 mA output proportional to rated voltage in both sinusoidal and non-sinusoidal (variable frequency) situations. Housed in a slim, compact, easy-to-install DIN rail mount enclosure, the VTR Series comes in a variety of voltage ranges and with four-wire terminal block connection.



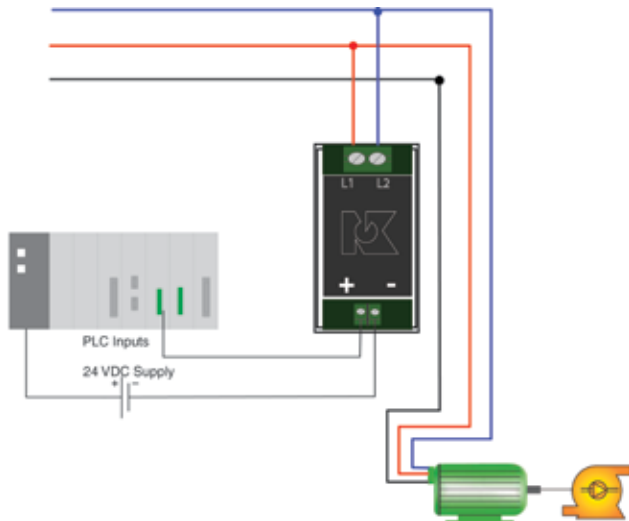
Voltage Transducers

### Voltage Transducer Applications

#### True RMS Voltage Monitoring

- Detect below normal or “brown out” voltage conditions; protect against possible motor overheating.
- Identify phase loss conditions by detecting voltage reduction in one or more phase of three-phase motor.
- Monitor over voltage conditions associated with regenerative voltage to help in diagnosing/avoiding motor drive issues.
- Detect voltage conditions which may cause stress in or damage to soft starter components (SCRs).

#### Phase Loss Protection



### Voltage Transducer Features

#### True RMS Output

- Allows for use in situations where power supplied is non-sinusoidal such as VFD applications, poor power quality installations or other electrically harsh/challenging environments.

#### Standard 4–20 mA Loop Powered Output

- Industry standard output makes use with existing controllers, data loggers and SCADA equipment easy and reliable.

#### Input/Output Isolation

- Input and output circuitry electrically isolated for improved safety of use.

#### Compact DIN rail Mount Enclosure\*

- Space saving 35 mm wide enclosure mounts quickly for an attractive installation.

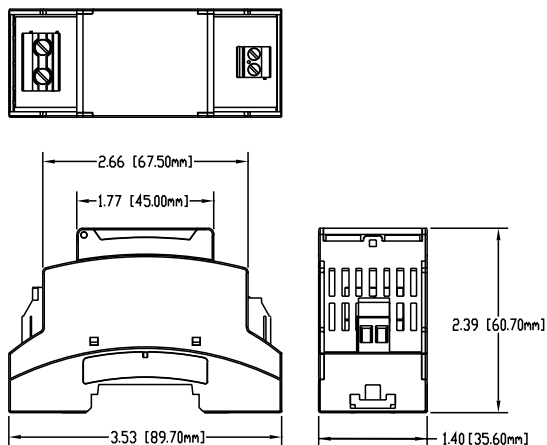
\*For panel mounting see DIN Rail mounting kit accessory page.

- For additional Application Examples, see page 110 and [www.nktechnologies.com](http://www.nktechnologies.com)

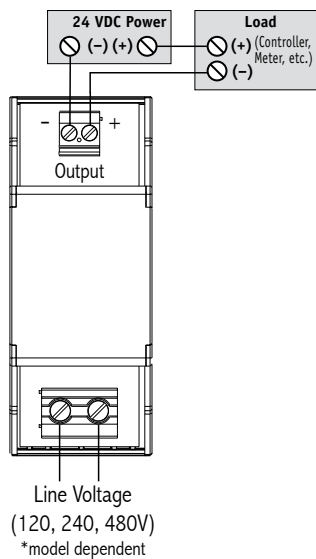


Free program expedites evaluation process. See page 1 for details.

### Voltage Transducer Dimensions



### Voltage Transducer Connections



### Voltage Transducer Specifications

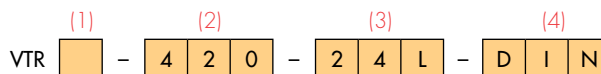


Power Supply	24 VDC Loop-powered (12–40 VDC)
Input	120 V, 150 V, 240 V, 480 V, 500 V, 600 V
Output	4–20 mA Proportional; capped at 24 mA max.
Response Time	250 ms (to 90% value)
Accuracy	1.0% FS (10–100% of range)
Linearity	<0.5%
Loading	<500 Ω
Isolation Voltage	UL listed to 2500 VAC, tested to 5 KV
Frequency Range	40–100 Hz
Mounting	DIN rail compatible
Case	UL94 V0 Flammability Rated; noncorrosive thermoplastic
Environmental	-22 to 140°F (-30 to 60°C) 0–95% RH, non-condensing
EMC/Immunity	EN50081-1, EN50082-2
Ripple	<1% (peak to peak)
Listings	UL 508 Industrial Control Equipment (USA & Canada), CE

Voltage Transducers

### Voltage Transducer Ordering Information

Sample Model Number: VTR1-420-24L-DIN  
True RMS voltage transducer with 120 V voltage range, standard 4–20 mA proportional output; 24 V loop-powered with a DIN-compatible enclosure.



#### (1) Voltage Range

1	120 V
2	150 V
3	240 V
4	480 V
5	500 V
6	600 V

#### (2) Output Type

420	4–20 mA
-----	---------

#### (3) Supply Voltage

24L	24 V Loop powered
-----	-------------------

#### (4) Mounting

DIN	DIN rail compatible
-----	---------------------

