

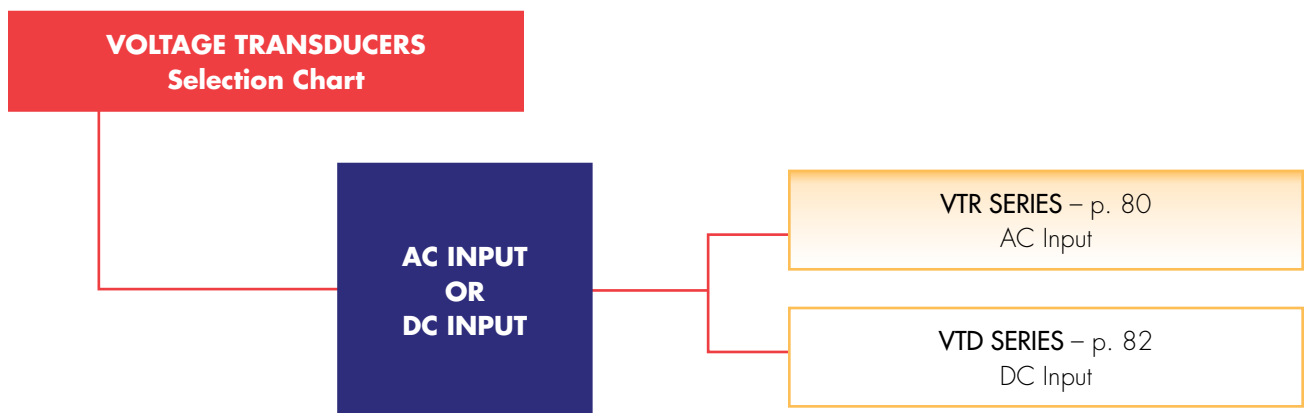
# Voltage Transducers

NK Technologies' voltage transducers are high-performance transducer for sensing voltage in installations. They are available in an AC or DC Series and come in a variety of nominal voltages.

- **VTR SERIES**  
AC Voltage Transducers ..... page 80
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## Features

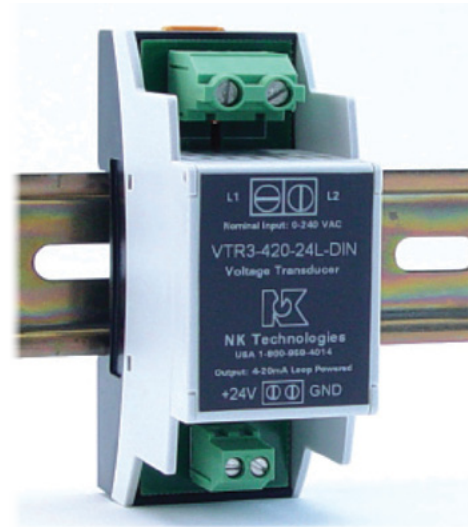
- AC or DC models
- Standard 4–20 mA Powered Output  
Industry standard output makes use with existing controllers, data loggers and SCADA equipment easy and reliable
- Input/Output Isolation  
Input and output circuitry electrically isolated for improved safety of use
- Compact DIN rail Mount Enclosure  
Space saving 35 mm wide enclosure mounts quickly for an attractive installation



# 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.

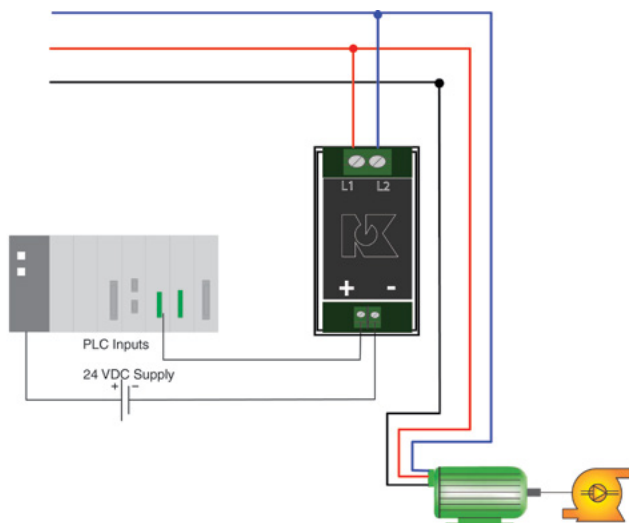


### Voltage Transducer Applications

#### 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.

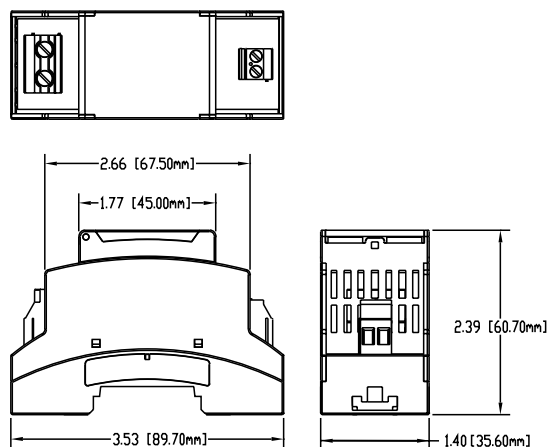
- For additional Application Examples, see page 110 and [www.nktechnologies.com](http://www.nktechnologies.com)



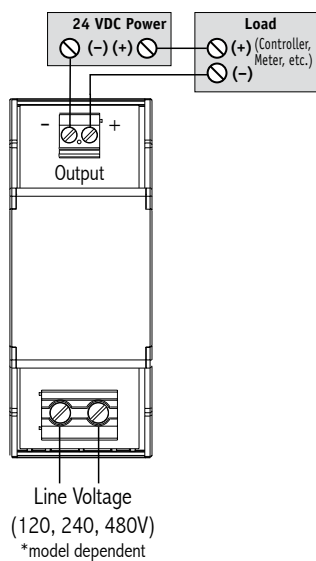
Free program expedites evaluation process. See page 1 for details.



### Voltage Transducer Dimensions



### Voltage Transducer Connections



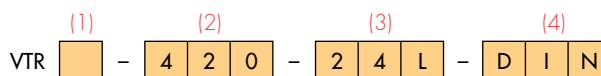
### Voltage Transducer Specifications

Power Supply	24 VDC Loop-powered
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	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)

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
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#### (3) Supply Voltage

24L	24 V Loop powered
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#### (4) Mounting

DIN	DIN rail compatible
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# VTD SERIES

## DC Voltage Transducers

VTD Series Voltage Transducers are high-performance transducers for sensing voltage in DC powered installations. Applicable for use on circuits to 600 VDC, VTD voltage transducers provide a fully isolated, 4–20 mA output proportional to rated nominal voltage in DC circuits. Housed in a slim, compact, easy-to-install DIN rail mount enclosure, the VTD Series comes in a variety of nominal voltages.



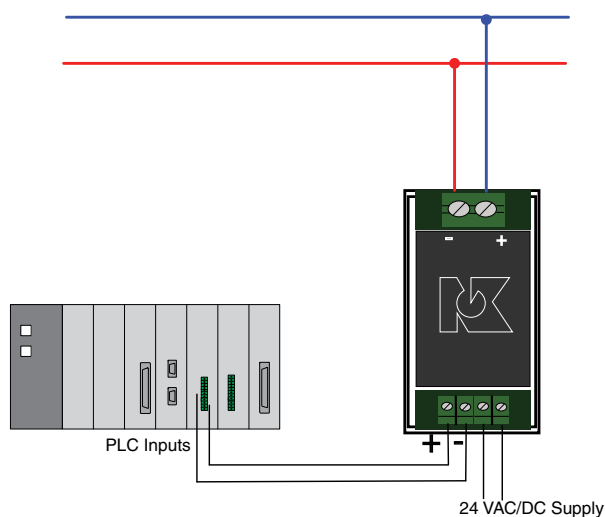
Voltage Transducers

### Voltage Transducer Applications

#### Voltage Monitoring

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

#### DC Voltage Transducer Control



### Voltage Transducer Features

#### Accurate Output

- Several ranges available for your application, from 0–15 VDC to 0–600 VDC.

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

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

#### Input/Output Isolation

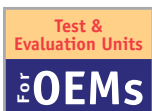
- Input and Output circuitry electrically isolated for improved safety of use.

#### Compact DIN rail Mount Enclosure\*

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

\*For information on the DIN Rail accessories kit, see page 109.

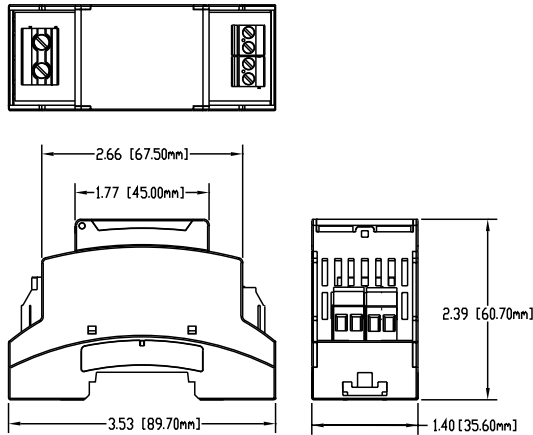
For additional Application Examples, see page 110 and [www.nktechnologies.com](http://www.nktechnologies.com)



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



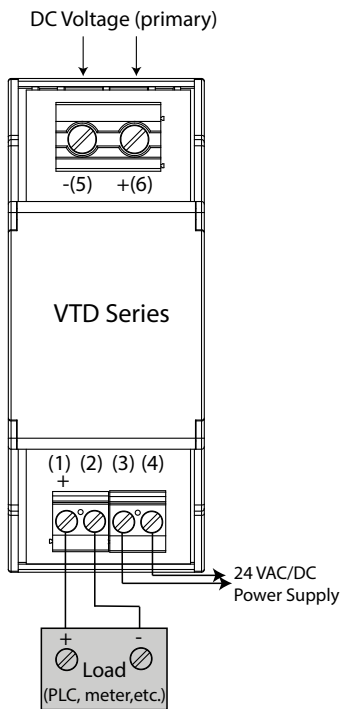
### Voltage Transducer Dimensions



### Voltage Transducer Specifications

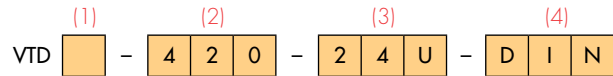
Power Supply	24 VAC/DC (20–45DC, 22–38 VAC)
Input	15 V, 25 V, 50 V, 150 V, 300 V, 600 VDC
Output	4–20 mA proportional; capped at 24 mA max.
Response Time	250 ms (to 90% value)
Accuracy	<1%
Linearity	<0.5%
Loading	<500 Ω
Isolation Voltage	UL listed to 2500 VAC, tested to 5 KV
Frequency Range	DC
Mounting	DIN rail compatible
Case	UL94 V0 Flammability Rated; noncorrosive thermoplastic
EMC/Immunity	EN50081-1, EN50082-2
Ripple	<1% (peak to peak)
Environmental	-22 to 122°F (-30 to 50°C) 0–95% RH, non-condensing
Listings	UL 508 Industrial Control Equipment (USA & Canada), CE (pending)

### Voltage Transducer Connections



### Voltage Transducer Ordering Information

Sample Model Number: VTD1-420-24U-DIN  
DC voltage transducer with 25 V range, standard 4–20 mA proportional output; 24 V externally powered with a DIN-compatible enclosure.



#### (1) Nominal Range

0	0–15 VDC
1	0–25 VDC
2	0–50 VDC
3	0–150 VDC
4	0–300 VDC
5	0–600 VDC

#### (2) Output Type

420	4–20 mA
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#### (3) Supply Voltage

24U	24 V external power supply
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#### (4) Mounting

DIN	DIN rail compatible
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