



# TRANSDUCERS

## VOLTAGE & CURRENT CONVERTER / RESCALER

### VTI SERIES

#### DESCRIPTION

The **Kele VTI Series** voltage and current converter/rescaler will convert voltage signals in the range of 1-19V or current signals in the range of 4-20 mA into a 4-20 mA/volts non-isolated signal. This current source signal can be direct or reverse acting and can be used to drive grounded 4-20 mA loads utilizing a single power supply. The **VTI** also accepts an input from a resistive potentiometer. The **VTI-1** is a single-input, single-output device, and the **VTI-2** accepts a single input and provides dual outputs.



VTI-2-H

VTI-1

#### FEATURES

- Converts voltage, current or potentiometer signal into 4-20 mA signal
- Direct or reverse acting
- Loss of input signal results in 0 mA output
- LED indication of valid input signal (VTI-1)
- One input dual output model
- Independently configurable outputs

#### APPLICATION

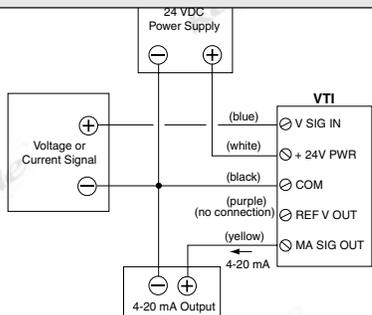
- Voltage to current conversion
- Resistance to current conversion
- Current to current scaling
- Setpoint adjustment using potentiometer
- Signal duplication (one input/two outputs)
- Averaging of 4-20 mA loops
- Signal reversal (0-10 ± 0-10)
- Signal sequencing

#### SPECIFICATIONS

<b>Supply Voltage</b>	22-27 VDC, half-wave		
<b>Supply Current</b>			
<b>VTI-1</b>	50 mA		
<b>VTI-2</b>	100 mA		
<b>Input</b>	1-19 VDC range (1V minimum span) or 4-20 mA range		
<b>Input Signal</b>	Threshold $\leq 0.7$ VDC		
<b>Input Impedance</b>			
<b>VTI-1</b>	301 k $\Omega$ @ 1-19 VDC; 250 $\Omega$ @ 4-40 mA with 4 mA minimum span; 500 $\Omega$ @ 2-38 mA with 2 mA minimum span; 750 $\Omega$ @ 1.3-25 mA with 1.33 mA minimum span		
<b>VTI-2</b>	150 k $\Omega$ @ 1-19 VDC; 250 $\Omega$ @ 4-40 mA with 4 mA minimum span; 500 $\Omega$ @ 2-38 mA with 2 mA minimum span; 750 $\Omega$ @ 1.3-25 mA with 1.33 mA minimum span		
<b>Action</b>	Direct or reverse acting		
<b>Linearity</b>	<1% of span		
<b>Output</b>			
		<b>VTI-1</b>	Single
		<b>VTI-2</b>	Dual
		<b>Output Burden</b>	850 maximum @ 24 VDC; $R_{max} = (V_{supply} - 7) / 20$ mA
		<b>Output Current</b>	0-20 mA (4-20 mA typical)
		<b>Output Voltage</b>	0-10V, (1-5V or 2-10V typical)
		<b>Wiring Terminations</b>	Screw terminals
		<b>Operating Temperature</b>	32° to 158°F (0° to 70°C)
		<b>Operating Humidity</b>	5% to 95% RH (non-condensing)
		<b>Dimensions</b>	
		<b>VTI-1</b>	1.8"H x 2.3"W x 0.8"D (4.5 x 5.7 x 2.2 cm)
		<b>VTI-2</b>	4.0"H x 2.3"W x 1.8"D (10.2 x 5.7 x 4.5 cm)
		<b>Weight</b>	
		<b>VTI-1</b>	0.13 lb (0.06 kg)
		<b>VTI-2</b>	0.38 lb (0.17 kg)
		<b>Approvals</b>	RoHS
		<b>Warranty</b>	1 year

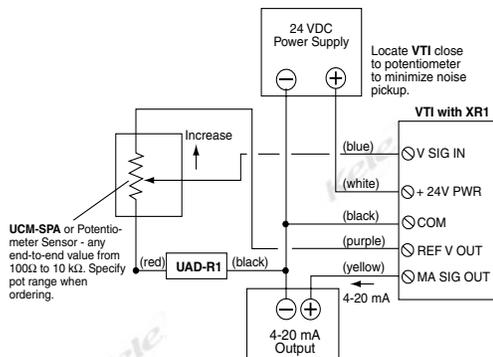


### WIRING

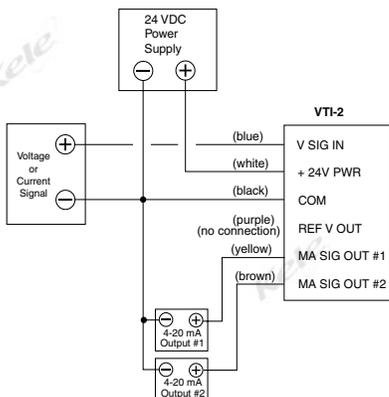


For signal reversal (20-4 mA OUT), specify reverse acting when ordering.

#### Voltage to Current, Current to Current, and Signal Reversal

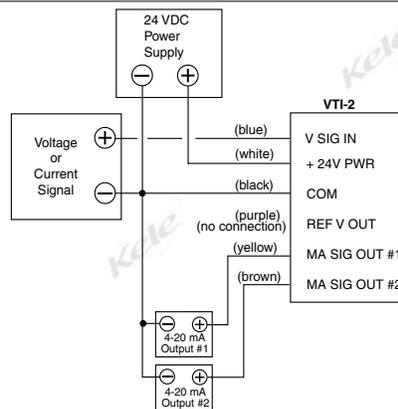


#### Using a Potentiometer to Vary a 4-20 mA Signal



**Example:** One 4-20 mA input becomes two identical 4-20 mA outputs.

#### Signal Duplication



**Example:** Output #1 is 4-20 mA over a 4-12 mA (1-3V) input. Output #2 is 4-20 mA over a 12-20 mA (3-5V) input.

#### Signal Sequencing

### ORDERING INFORMATION

MODEL	DESCRIPTION
VTI-1	Voltage and current converter/rescaler, single output*
VTI-2	Voltage and current converter/rescaler, dual output*
<b>ENCLOSURE</b>	
-	Leave blank for snap-track mounting (VTI-1 only)
H	1/2" Threaded hub mount
P	Panel mount
D	DIN rail mount
<b>OPTIONS</b>	
-XR1	Potentiometer to current converter (includes UAD-R1, potentiometer not included)

**Example:** VTI-1-XR1 Potentiometer to current converter, snap-track mounted

\* **Important!** The VTI is not intended for field calibration and must be factory-calibrated. Please supply the following information at time of order:  
Input - mA, volts, POT  
Output - mA, volts  
Action - Director Reverse

#### UCM-SPA

#### RELATED PRODUCTS

Setpoint potentiometer, 0-10 kΩ, three-wire potentiometer on stainless steel plate for remote mounting, 0-100% setpoint (-XR1 opt. required)