



# TRANSDUCERS

## ISOLATED DC TO DC TRANSMITTER DT13E SERIES

### DESCRIPTION

The **Kele DT13E** is a **signal isolator** that accepts a current or voltage input and provides a linearly transferred current or voltage output. The input and output are electrically isolated, making the **DT13E** useful for ground-loop elimination, common-mode signal rejection and noise pickup reduction. The **DT13E** is designed to function effectively in electrically noisy environments. The **DT13E** can interface with recorders, data loggers, personal computers, programmable controllers, HVAC controllers, building automation controllers, variable speed drives, and other process monitoring and control systems. Snap-track is included for easy mounting.



### FEATURES

- *Eliminates ground loop wiring problems*
- *Multiple input/output ranges are jumper-selectable*
- *24 and 120 VAC powered models*
- *Snap-track mounting for easy installation*



DT13E



### OPERATION

The **DT13E Series** input-conditioning circuitry scales and filters the DC input and drives a precision isolator, which carries the signal across the isolation barrier. The output side of the isolator drives a circuit that reconverts the signal into a replica of the input, which is again scaled (if necessary) to meet the user's requirement.

### SPECIFICATIONS

<b>Supply Voltage</b>		<b>Output</b>	Current or voltage, jumper selectable, zero/span adjustable to 20% offset
DT13E-120	120 VAC $\pm$ 10%, 50/60 Hz	<b>Output Current</b>	0/4-20 mA, 650 $\Omega$ maximum load
DT13E-24	24 VAC $\pm$ 10%, 50/60 Hz	<b>Output Voltage</b>	0-5 VDC, 1-5 VDC, 0-10 VDC, 2-10 VDC, 0-15 VDC, or 3-15 VDC;
<b>Supply VA</b>			6 mA maximum load
DT13E-120	6 VA	<b>Response Time</b>	70 ms typical
DT13E-24	12 VA	<b>Wiring Terminations</b>	Screw terminals
<b>Input</b>	Current or voltage, jumper selectable	<b>Operating Temperature</b>	14° to 140°F (-10° to 60°C)
<b>Input Signal</b>	0-20 mA, 4-20 mA, 0-5 VDC, 1-5 VDC, 0-10 VDC, 2-10 VDC, 0-15 VDC, or 3-15 VDC	<b>Operating Humidity</b>	5% to 95% RH (non-condensing)
<b>Input Impedance</b>	20 k $\Omega$ @ 5VDC; 13.3 k $\Omega$ @ 10 VDC; 12 k $\Omega$ @ 15 VDC; 125 $\Omega$ maximum @ 20 mA	<b>Dimensions</b>	2.3"H x 5.0"W x 1.3"D (5.7 x 12.7 x 3.2 cm)
<b>Linearity</b>	Better than 0.5% of span	<b>Weight</b>	0.65 lb (0.3 kg)
<b>Isolation</b>	1000 V (DC or AC peak) maximum	<b>Approval</b>	RoHS
		<b>Warranty</b>	1 year



### SETUP / CALIBRATION

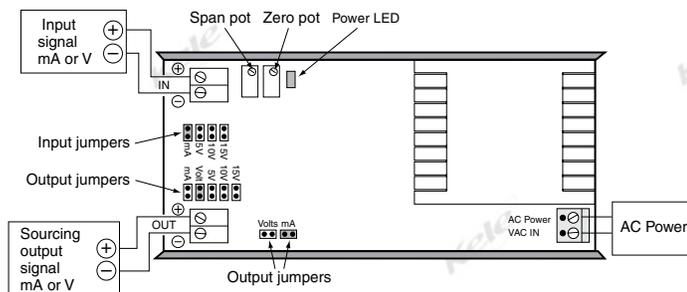
Table 1 shows the input and output configurations available with the **DT13E**. Determine the signal requirements for the application, and set the input and output jumpers according to the table. The input jumpers are located on the **DT13E** near the SIG IN terminals. The output jumpers are located near the SIG OUT terminals. If CAL appears in the table for desired signals, the **DT13E** will also require field calibration of the zero and span pots.

To field calibrate the **DT13E**, apply the appropriate supply voltage to the AC power terminals. The red PWR LED will be on continuously. Apply the minimum input signal to the SIG IN terminals. Adjust the zero pot until desired minimum output is reached. Now apply the maximum input signal, and adjust the span pot until the desired maximum output is reached. Repeat this process as necessary until accurate results are achieved.

**TABLE 1. INPUT AND OUTPUT CONFIGURATIONS**

INPUT SIGNAL	JUMPERS	OUTPUT SIGNAL							
		0-20 mA	4-20 mA	0-5V	1-5V	0-10V	2-10V	0-15V	3-15V
0-20 mA	INPUT	20 mA	20 mA	20 mA	20 mA	20 mA	20 mA	20 mA	20 mA
	OUTPUT	mA, mA	mA, mA, CAL	V, V, 5V	V, V, 5V, CAL	V, V, 10V	V, V, 10V, CAL	V, V, 15V	V, V, 15V, CAL
4-20 mA	INPUT	20 mA	20 mA	20 mA	20 mA	20 mA	20 mA	20 mA	20 mA
	OUTPUT	mA, mA, CAL	mA, mA	V, V, 5V, CAL	V, V, 5V	V, V, 10V, CAL	V, V, 10V	V, V, 15V, CAL	V, V, 15V
0-5V	INPUT	5V	5V	5V	5V	5V	5V	5V	5V
	OUTPUT	mA, mA	mA, mA, CAL	V, V, 5V	V, V, 5V, CAL	V, V, 10V	V, V, 10V, CAL	V, V, 15V	V, V, 15V, CAL
1-5V	INPUT	5V	5V	5V	5V	5V	5V	5V	5V
	OUTPUT	mA, mA, CAL	mA, mA	V, V, 5V, CAL	V, V, 5V	V, V, 10V, CAL	V, V, 10V	V, V, 15V, CAL	V, V, 15V
0-10V	INPUT	10V	10V	10V	10V	10V	10V	10V	10V
	OUTPUT	mA, mA	mA, mA, CAL	V, V, 5V	V, V, 5V, CAL	V, V, 10V	V, V, 10V, CAL	V, V, 15V	V, V, 15V, CAL
2-10V	INPUT	10V	10V	10V	10V	10V	10V	10V	10V
	OUTPUT	mA, mA, CAL	mA, mA	V, V, 5V, CAL	V, V, 5V	V, V, 10V, CAL	V, V, 10V	V, V, 15V, CAL	V, V, 15V
0-15V	INPUT	15V	15V	15V	15V	15V	15V	15V	15V
	OUTPUT	mA, mA	mA, mA, CAL	V, V, 5V	V, V, 5V, CAL	V, V, 10V	V, V, 10V, CAL	V, V, 15V	V, V, 15V, CAL
3-15V	INPUT	15V	15V	15V	15V	15V	15V	15V	15V
	OUTPUT	mA, mA, CAL	mA, mA	V, V, 5V, CAL	V, V, 5V	V, V, 10V, CAL	V, V, 10V	V, V, 15V, CAL	V, V, 15V

### WIRING



**DT13E**

### ORDERING INFORMATION

MODEL	DESCRIPTION
<b>DT13E-24</b>	Isolated DC-to-DC transmitter, 24 VAC
<b>DT13E-24-C</b>	Isolated DC-to-DC transmitter, 24 VAC, Custom Factory Calibration
<b>DT13E-120</b>	Isolated DC-to-DC transmitter, 120 VAC
<b>DT13E-120-C</b>	Isolated DC-to-DC transmitter, 120 VAC, Custom Factory Calibration