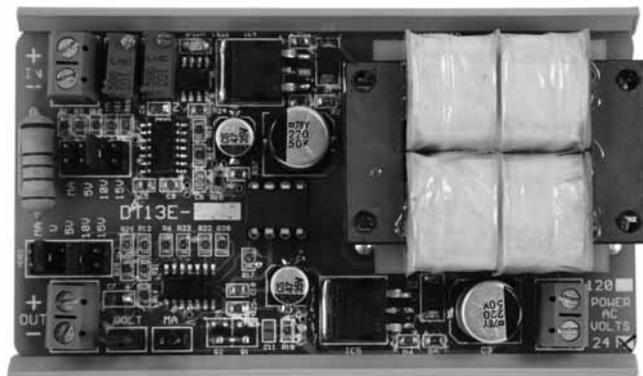




# ISOLATED DC-TO-DC TRANSMITTER MODEL DT13E

## DESCRIPTION

The **Model 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 **model 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.



DT13E (0.5% linearity)

## FEATURES

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



## OPERATION

The **Model DT13E** 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>Input/Output</b>	0-20 mA, 4-20 mA, 0-5V, 1-5V, 0-10V, 2-10V, 0-15V, or 3-15 VDC jumper selectable	<b>Linearity</b>	Better than 0.5% of span
<b>Input impedance</b>		<b>Response time</b>	70 ms typical
<b>Voltage</b>	5 VDC: 20 k $\Omega$ ; 10 VDC: 13.3 k $\Omega$ ; 15 VDC: 12 k $\Omega$	<b>Ambient operating temp</b>	14° to 140°F (-10° to 60°C)
<b>Current</b>	20 mA: 125 $\Omega$ max	<b>Humidity</b>	5% to 95% RH non-condensing
<b>Output capability</b>		<b>Power</b>	
<b>Voltage</b>	15 VDC, 6 mA max current loading	<b>DT13E-24</b>	24 VAC $\pm$ 10% 50/60 Hz, 12 VA
<b>Current</b>	20 mA DC, 650 $\Omega$ max load	<b>DT13E-120</b>	120 VAC $\pm$ 10% 50/60 Hz, 6 VA
<b>Output zero/span</b>	Up to 20% offset to the 0-20 mA, 0-5V, 0-10V, and 0-15V ranges	<b>Dimensions</b>	2.25"H x 5"W x 1.25"D (5.7 x 12.7 x 3.2 cm)
<b>Isolation</b>	1000V (DC or AC peak) max	<b>Weight</b>	0.65 lb (0.3 kg)
		<b>Warranty</b>	1 year

## SETUP AND CALIBRATION

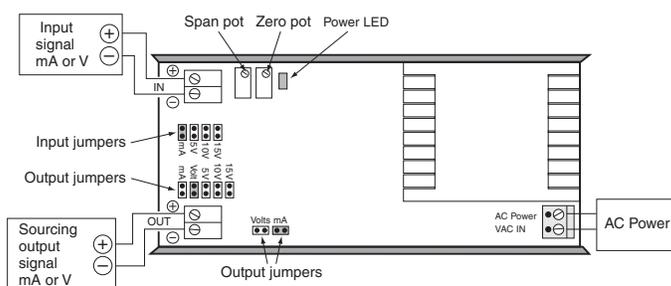
Table 1 below shows the input and output configurations available with the **DT13E**. Determine the signal requirements for the application, and set the input and output jumpers according to the table. The input jumpers are located on the **DT13E** near the SIG IN terminals. The output jumpers are located 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**  
DT13E-24  
DT13E-120  
-C

**DESCRIPTION**  
Isolated DC-to-DC transmitter 24 VAC (0.5% linearity)  
Isolated DC-to-DC transmitter, 120 VAC (0.5% linearity)  
Option: factory set to specific input/output (specify when ordering)