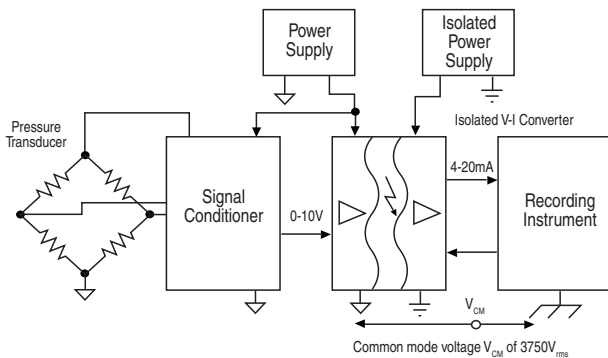


**Isolated 0-10V to 4-20mA  
Converter Application**

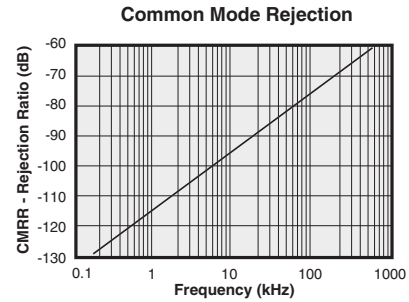


Industrial controllers and data acquisition equipment frequently require an isolated voltage-to-current loop converter in environments where high common mode noise exist and protection of equipment and personnel from high voltages are required. The current loop, usually 4-20mA, is used to drive control valves or the input to chart recorders for temperature/pressure monitoring over time for example. Figure 1 shows a simplified block diagram of an isolated pressure transmitter.



**Figure 1. Isolated Pressure Transmitter**

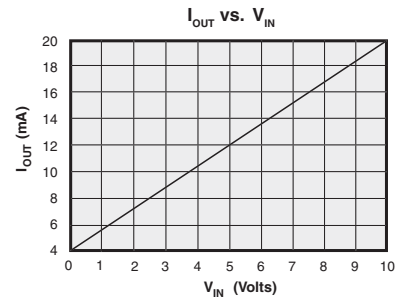
The LIA100P, with a typical Common Mode Rejection Ratio of 130dB (see Figure 1A) and isolation voltage up to 3750V is a good choice for this kind of application.



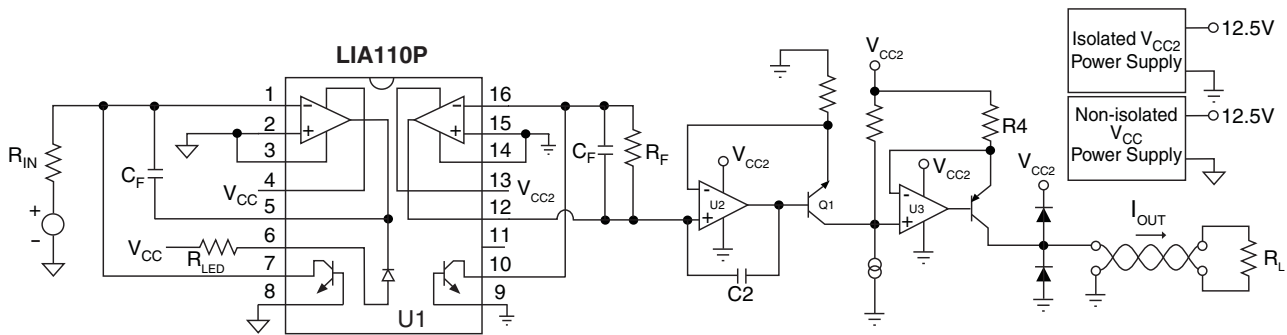
**Figure 1A.**

The example circuit for this application is shown in figure 1B.

The LIA110P is in the photovoltaic mode which has linearity comparable to a 13-14 bit D/A converter with 1 LSB nonlinearity or 0.01% of full scale. The result is a clean, linear conversion from 0-10V to 4-20mA as shown in figure 2.



**Figure 2.**



Note: For single power supply:  $\downarrow = V_{EE1}$   $\uparrow = V_{EE2}$

**Figure 1B. 0-10V to 4-20mA Converter**

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