

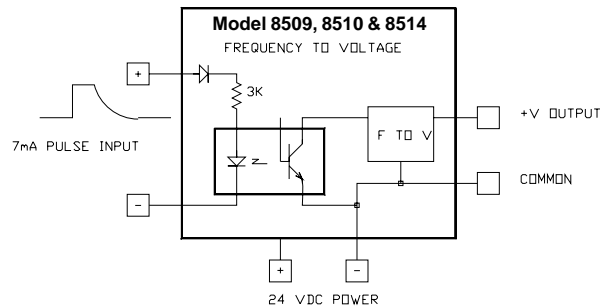
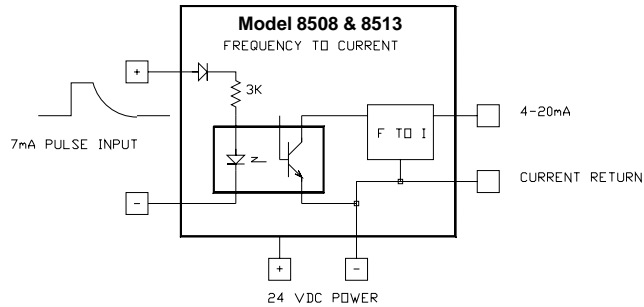
# Models 8508, 8509, 8510, 8513, 8514

## Frequency to Analog

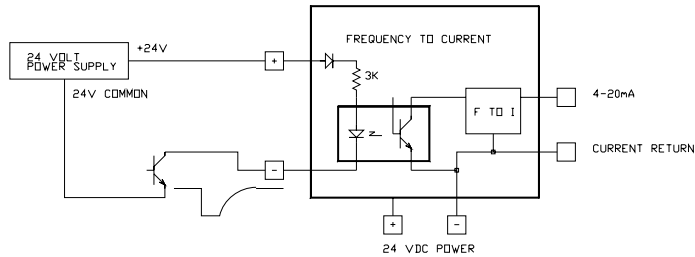
**Models 8508, 8509, 8510, 8513 and 8514** frequency to analog converters are designed to operate from the common 24 Volt , 7mA PLC discrete outputs or any source that can switch 7mA through 3000 ohms. Their input is an isolated optocoupler diode which provides DC isolation from the pulse source, DC power and the output. These units will operate with a DC supply of 22 Volts to 26 Volts. The modules are housed in a plastic housing with a U-foot for mounting on standard DIN rails. The unit's dimensions, excluding the

mounting foot, are 1.65"H x 1.06"W x 3.78"L. Connections are made to screw clamp terminal blocks.

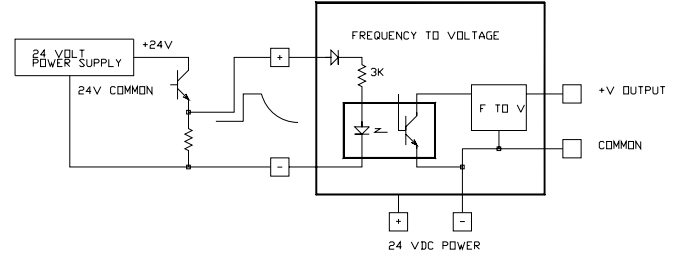
The model 8508 provides a 4 to 20mA output for a 1kHz to 5kHz input frequency for a 4  $\mu$ A per Hertz resolution. The model 8509 voltage output is scaled for 1mV per Hertz to 5kHz for 5 Volts output and the 8510 is scaled for 2.5 mV per Hertz to produce 5 volts output at 2kHz input. The model 8513 provides 4 to 20mA output for 400Hz to 2kHz input frequency for a 10 $\mu$ A per Hertz resolution. Model 8514 voltage output is scaled for 5mV per Hertz to 2kHz for 10 volts output.



**MODEL 8508, 8509, 8510, 8513, 8514  
SINK CONNECTION**



**MODEL 8508, 8509, 8510, 8513, 8514  
SOURCE CONNECTION**



Model	8508	8509	8510	8513	8514
Input	0 to 5000 Hz	0 to 5000 Hz	0 to 2000 Hz	0 to 2000 Hz	0 to 2000 Hz
Output	0 to 20 mA	0 to 5 Volts	0 to 5 Volts	0 to 20 mA	10 Volts
Resolution	4 $\mu$ A/Hz 12 Bits	1 mV/Hz 12 Bits	2.5 mV/Hz 12 Bits	10 $\mu$ A/Hz 12 Bits	5 mV/Hz 12 Bits
Linearity	$\pm 0.02\%$ Typical $\pm 0.05\%$ Maximum	$\pm 0.02\%$ Typical $\pm 0.05\%$ Maximum	$\pm 0.02\%$ Typical $\pm 0.05\%$ Maximum	$\pm 0.02\%$ Typical $\pm 0.05\%$ Maximim	$\pm 0.02\%$ Typical $\pm 0.05\%$ Maximum
Accuracy	$\pm 0.15\%$ Maximum				
Temperature Coefficient	$\pm 0.005\%/^{\circ}\text{C}$ Typical				
Output Load	0 to 500 Ohms	5 mA Maximum	5 mA Maximum	0 to 500 Ohms	5 mA Maximum
Response Time	200 ms	200 ms	400 ms	200 ms	1 s
Frequency Ripple	4 $\mu$ A Maximum	5 mV Maximum	10 mV Maximum	100 Hz 12 $\mu$ A pp 1 kHz 3 $\mu$ A pp 2 kHz 1 $\mu$ A pp	100 Hz 5 mV 1 kHz 2 mV 2 kHz 1 mV
Power Requirements	Power Supply Common Connected to Signal Output Common				
Voltage	22 to 26 Volts DC	15 to 26 Volts DC	15 to 26 Volts DC	22 to 26 Volts DC	15 to 26 Volts DC
Current	30 mA Typical	15 mA Typical	15 mA Typical	30 mA Typical	15 mA Typical
Environment					
Operating	0°C to +55°C				
Storage	-40°C to +80°C				
Size	1.65"H x 1.06"W x 3.78"L (42 x 27 x 96 mm)				
Weight	3 oz. (85 grams)				
Agency Approvals	UL 508, C22.2 No 14-M91, UL 1604, C22.2 No 213-M1987				