



SYSTEMS M200

INTERFACE MODULES

M230: FREQUENCY-TO-VOLTAGE CONVERTER

- Converts 0-1KHZ input frequency to proportional analog output
- 0-10 volt or 0-20 milliamp analog output
- Adjustable output full scale range
- Optically isolated 10-30 VDC differential input
- Powered from +24VDC
- Removable Field Wiring Connector
- Standard 3" x 3" x 1" DIN Rail Mountable Module



General Description

The M230 Frequency-to-Voltage converter module converts an input frequency to a proportional analog voltage or current level. The input is a 10-30VDC optically isolated differential input. The output can be selected for either 0-20 milliamps or 0-10 volts via wire jumper on the field wiring connector. See figure 1 for details on connecting the M230 for 0-10 volt output and figure 2 for details on connecting the M230 for 0-20 milliamp output.

The output is proportional to the input frequency such that at the input frequency of zero HZ, the out-

put = 0. At an input frequency of 500HZ, the output is at half of full scale. At an input frequency of 1000HZ, the output is at full scale, etc. The full scale output level (input freq = 1KHZ) can be adjusted via the "Range" potentiometer accessible through the side of the M230. The full scale output can be adjusted between 5 and 10 volts or 10 and 20 milliamps.

Typical applications include motor speed control, where a motor tracks a digital tach or pulse train output from a Programmable Limit Switch.

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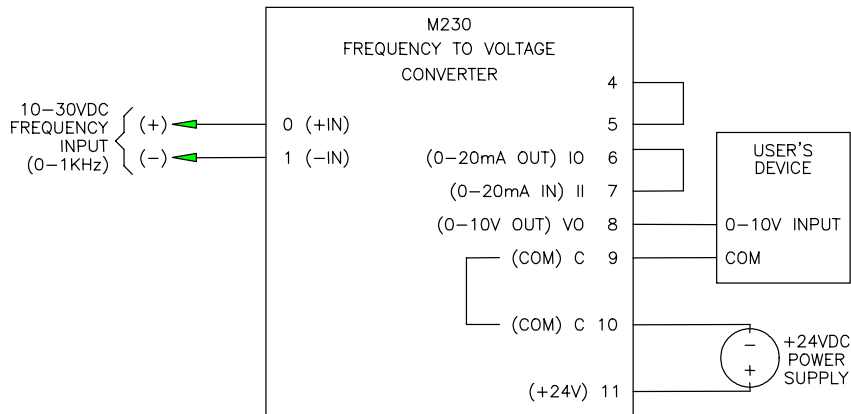


Figure 1
Connecting the M230 for 0-10 Volt Output

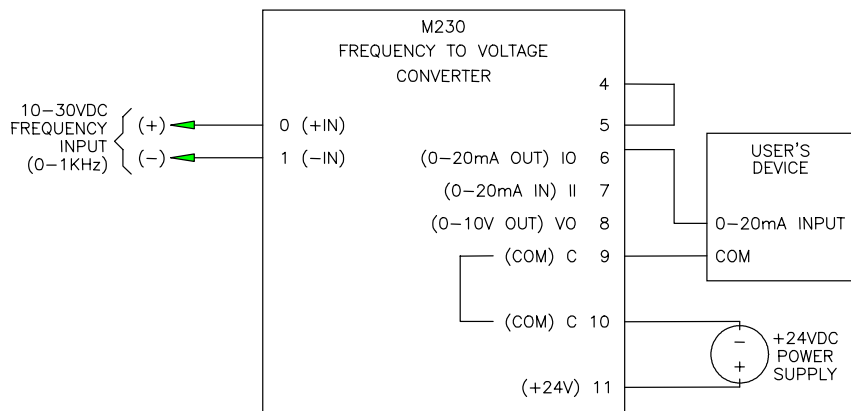


Figure 2
Connecting the M230 for 0-20 milliamp Output

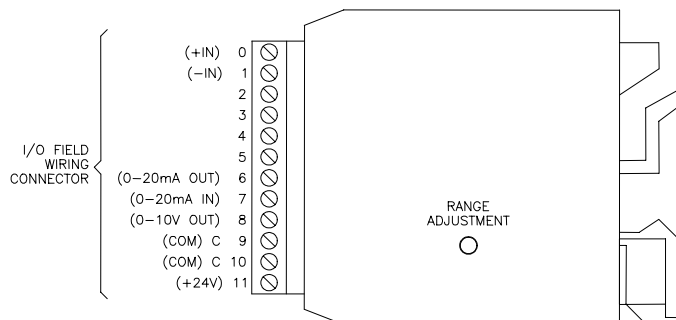


Figure 3
Connector Pin-Out



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Specifications

Module Size:

Length:	3.25"
Height:	3.75"
Width:	1.00"

Input Section:

Vin (on-min):	10.0 volts
Vin (on-max):	30.0 volts
Vin (off-min):	5.0 volts
Input Current (max):	27 milliamps at Vin=30volts
Input to Output Optical Isolation:	1500 Vrms
Input Configuration:	Can be wired for Sourcing, Sinking, or Differential

Output Section:

Output Types (wire selectable):	0-10 volt or 0-20 milliamp
Full Scale Output Range (input Freq = 1KHZ):	
0-10 Volt Output Mode:	5 to 10 volts
0-20 milliamp Output Mode:	10 to 20 milliamps
Load Resistance:	
0-10 Volt Output Mode:	2K ohms or greater
0-20 milliamp Output Mode:	400 ohms or less
Short Circuit Duration:	
0-10 Volt Output Mode:	Continuous
0-20 milliamp Output Mode:	Continuous
Output Ripple:	
0-10 Volt Output Mode:	0.150 volts (max)
0-20 milliamp Output Mode:	0.300 milliamps (max)
Step Response time (full scale output Response from input freq = 0 to an Instant freq = 1KHZ):	300 milliseconds
Power Requirements:	
User Supply Voltage:	+24VDC +/-10%
User Supply Current:	200 milliamps
Temperature Ranges:	
Storage:	0 to 85 degrees C
Operating:	0 to 60 degrees C
Relative Humidity:	5 to 95% non-condensing

