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GPM

Configurable Hybrid Modules
Oscillator and Demodulator

Datasheet
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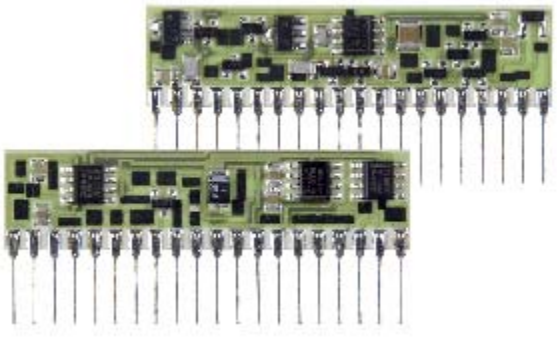


Features

- Small size
- Ease of use
- Low cost
- No extra components required
- For assembly to OEM circuit boards

Description

The GPM Series oscillator and demodulator have been designed to provide miniature and flexible signal conditioning. They are manufactured using thick film hybrid technology, which allows for a major reduction in size, and tighter control of performance. Their small size means that they can be assembled by the OEM user into equipment, or built into confined spaces.

Each hybrid has been designed to include the most commonly required options, which can be selected by linking pins on the device. However, if unusual frequencies, etc, are required, these can be accommodated by the addition of a few external components.

The oscillator is designed to provide a sine wave carrier for driving the transducer and a square wave reference for the demodulator. The nominal output is 5 V rms at 5 or 10 kHz, but the device can operate over 1 to 20 kHz, at 0.5 to 7 V rms. It can also provide an output voltage proportional to supply voltage, or an external reference. If more than one oscillator is used, they can be synchronised to avoid interaction problems.

The demodulator is designed to amplify the output from the transducer and convert it to a DC voltage. It provides a nominal 5 VDC output (linear to 10 V) for inputs from 2.5 mV to 3.75 V rms (corresponding to 0.5 mV/V to 750 mV/V for 5 V energisation of transducer). 22 gains can be selected using links, and an external fine gain control can be added. Facilities also exist for adjusting zero anywhere in the range of the transducer, enabling end or centre zero. Again, a fine control can be added externally. The output filter characteristics can also be altered by addition of external components.

These two hybrids have been designed to contain all the most popular options, so application will normally be a simple matter. A set of application notes is available to assist in designing with this product.

Technical Specification

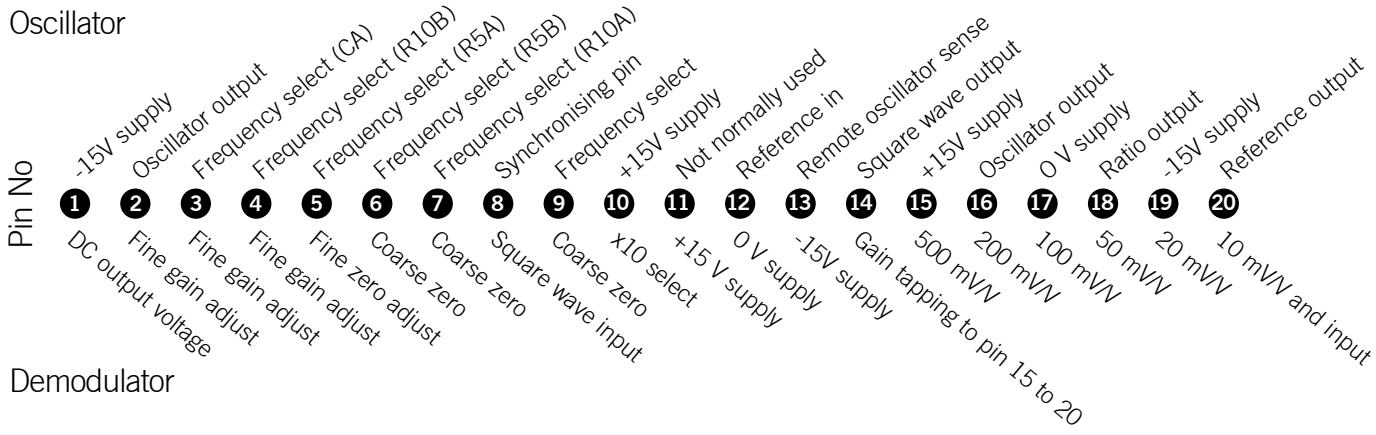
Power Requirement

		Oscillator	Demodulator
Voltage Range		±15 VDC nominal (±7.5 VDC to ±18 VDC acceptable)	
Current Range		±39 mA	±15 mA
Transducer Modulation/Demodulation			
Oscillator Electrical Characteristics			
Primary Voltage		5 V rms nominal, 0.5 V to 7 V variable[1]	
Primary Frequency		5 kHz, 10 kHz or 15 kHz 1 to 20 kHz variable[1]	
Primary Current		50 mA rms max	
Oscilator Protection		Open and short circuit protected	
Gain Control		Remote sense facility	
Temperature Coefficient of Amplitude		±0.004%/°C	
Temperature Coefficient of Frequency		±0.02%/°C	
Demodulator Electrical Characteristics			
Sensitivity			5 VDC output in 9 gain ranges for inputs from 2.5 mV to 3.75 V rms. Fine gain control can be added[1]
Output Offset	Fine		±30%
	Coarse		±100%
Voltage Output			Up to ±10 V (with ±15 V power supply)
Bandwidth (-3 dB)			500 Hz, 2nd order may be altered
Output Ripple			1 mV rms
Temp. Co. Gain			0.05%/°C[2]
Temp. Co. Offset			0.05%/°C[2]
Warm-up		15 minutes recommended	
Linearity			<0.02%
Environmental			
Operational Temperature Range		0 to 70ºC (32 to 158ºF)	
Mechanical and Connections			
Weight		3.5g approx.	
Size		52 x 15 x 6 mm approx.	
Mounting		PCB mount conformal coated sil package	
Connections		See diagram	

Notes

[1] Requires additional resistors.

[2] Assumes ±5 V output.



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