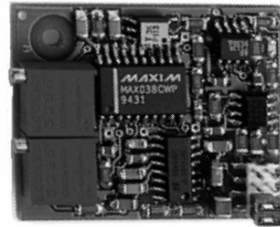




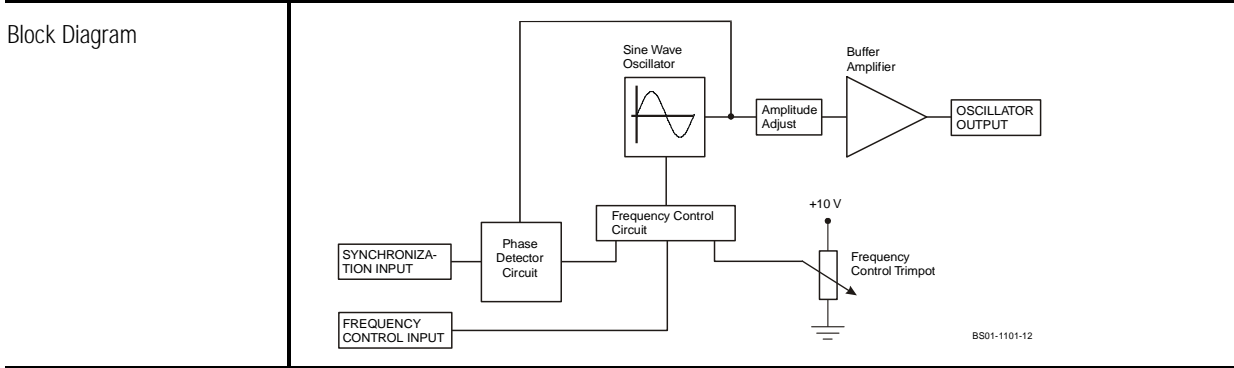
Datasheet **SOM-1**

**Reference Sine Oscillator Module
for LIA-BV-150/LIA-MV-200 Series**



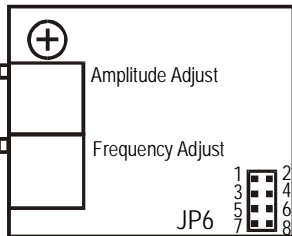
Features	<ul style="list-style-type: none"> • Sine Wave Output from 5 Hz to 130 kHz • Adjustable Frequency and Amplitude • PLL for Synchronization to External Reference • Plug-In Module for Series LIA-BV(D)-150/LIA-MV(D)-200 Lock-In Amplifiers
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Applications	<ul style="list-style-type: none"> • Reference Source for Lock-In Amplifier
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Specifications	<p><i>Test Conditions</i> $V_s = \pm 5 V, T_a = 25^\circ C$</p>
Oscillator Frequency	<p>Frequency Range 4 ranges, 5 Hz ... 130 kHz total (factory set at 1 kHz)</p> <p>Manual Frequency Control 4 range settings via jumpers 5-6 and 7-8, adjustable frequency within range via 25-turn trimpot</p> <p>Remote Frequency Control 4 range settings via digital control input pins 4 and 6, leave jumpers 5-6 and 7-8 open, adjustable frequency within range via control voltage 0 V ... + 10 V at pin 10 with reference to GND pin 8</p> <p>THD 0.8 % typ.</p> <p>Temperature Coefficient 800 ppm/K allow 20 min warm-up time for good temperature stability</p>
	<p>Oscillator Amplitude</p> <p>Amplitude Range 0 ... 2 Vrms (factory set at 1 Vrms)</p> <p>Amplitude Control 25-turn trimpot</p> <p>Amplitude Accuracy 100 ppm/K</p>
	<p>Oscillator Output</p> <p>Output Impedance 10 Ω (terminate with load > 1 kΩ)</p> <p>Maximum Output Current ± 5 mA</p>
	<p>External Synchronization</p> <p>Synchronization Input opto-coupler input with reference to synchronization ground pin 3</p> <p>Sync. Input Voltage Level Low: - 0.8 V ... + 1.2 V, High: + 3.5 V ... + 6 V</p> <p>Sync. Input Current 0 mA @ 0 V, 6 mA @ + 5 V typ.</p>
Power Supply	<p>Supply Voltage ± 5 V</p> <p>Supply Current ± 70 mA</p>

Reference Sine Oscillator Module for LIA-BV-150/LIA-MV-200 Series

Board	Dimensions Weight	31 mm x 39 mm 10 g (0.022 lbs)																																	
Temperature Range	Storage Temperature Operating Temperature	- 40 ... + 100 °C 0 ... + 60 °C																																	
Absolute Maximum Ratings	Power Supply Voltage	± 6 V																																	
Jumper Settings (JP6)	Frequency Range Selection	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">5 - 6</th> <th style="width: 33%;">7 - 8</th> <th style="width: 33%;">Frequency Range</th> </tr> </thead> <tbody> <tr> <td>close</td> <td>close</td> <td>5 Hz ... 90 Hz</td> </tr> <tr> <td>open</td> <td>close</td> <td>60 Hz ... 1.2 kHz</td> </tr> <tr> <td>close</td> <td>open</td> <td>900 Hz ... 18 kHz</td> </tr> <tr> <td>open</td> <td>open</td> <td>7 kHz ... 130 kHz</td> </tr> </tbody> </table> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">1 - 2</th> <th style="width: 33%;">Control Mode</th> <th style="width: 33%;"></th> </tr> </thead> <tbody> <tr> <td>open</td> <td>trimpot control</td> <td></td> </tr> <tr> <td>close</td> <td>voltage control (external interface)</td> <td></td> </tr> </tbody> </table> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">3 - 4</th> <th style="width: 33%;">Synchronization</th> <th style="width: 33%;"></th> </tr> </thead> <tbody> <tr> <td>open</td> <td>on</td> <td></td> </tr> <tr> <td>close</td> <td>off</td> <td></td> </tr> </tbody> </table>	5 - 6	7 - 8	Frequency Range	close	close	5 Hz ... 90 Hz	open	close	60 Hz ... 1.2 kHz	close	open	900 Hz ... 18 kHz	open	open	7 kHz ... 130 kHz	1 - 2	Control Mode		open	trimpot control		close	voltage control (external interface)		3 - 4	Synchronization		open	on		close	off	
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close	off																																		
Jumper Positions Diagram																																			
Connector	Connector Type	2 mm pitch socket, 10-pin																																	
	Oscillator Output	Pin 2: oscillator output Pin 8: output GND																																	
	Control Inputs	Pin 4: frequency range control input, MSB Pin 6: frequency range control input, LSB Pin 10: frequency control input Pin 1: external synchronization input Pin 3: external synchronization input GND																																	
	Power Supply	Pin 9: power supply - 5V Pin 5: power supply + 5V Pin 7: power supply GND																																	

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