resolver excitation oscillator
150mA programmable
series 210A200

FEATURES
- 2.0" x 2.0" x 0.4" micro-module
- Up to 15Vrms output
- 10 bit amplitude control
- Eight frequency ranges, 400Hz to 5000Hz
- Short circuit and overload protection
- Thermal cut-off protection
- Integral heatsink

APPLICATIONS
- Resolver excitation
- LVDT excitation
- RVDT excitation

GENERAL DATA

The 210A200 is a programmable power oscillator capable of exciting most low-voltage brushless resolvers. Because of its excellent amplitude and frequency stability, it is also ideal for driving LVDT and RVDT transducers. The oscillator is packaged in a module measuring only 2.0" x 2.0" x 0.4" and weighing only 1.5 ounces. An aluminum top plate provides all the necessary heatsinking.

The oscillator amplitude is controlled via a 10 bit binary latched input. The frequency is controlled with 3 bit latched input allowing for eight of the most commonly used excitation frequencies, ranging from 400Hz to 5000Hz.

HEATSINKING AND POWER DISSIPATION

The top of the 210A200 consists of a metal plate providing all the required heatsinking. This metal top plate should be provided with sufficient air circulation.

The thermal dissipation characteristics for the oscillator are as follows:

$\Theta_{junction\ -\ top\ plate} = 20°C/Watt$

$\Theta_{top\ plate\ -\ ambient} = 10°C/Watt$

$\Theta_{j\ (max)} = 125°C$

SPECIFICATIONS

Parameter	Value
Oscillator Output (RH-RL)	
Frequency	
Ranges	400, 800, 1200, 2000, 2500, 3000, 4000 and 5000Hz
Tolerance	±5%
Stability	±0.005%/°C
Amplitude	
Range(1)	0 to 14.985Vrms
Resolution	0.0146Vrms (10 bits)
Accuracy	±1%
Stability	0.01%/°C
Capacitive Load	10nF max.
Drive	150mA max.
Digital Inputs	
Logic Type	LSTTL positive logic
Bits 1-10	Binary amplitude control
Bits 14-16	Frequency control
ENM	Latch control, bits 1-8
ENL	Latch control, bits 9-16
Power Supplies(2)	
+V	45mA + load
-V	45mA + load
+5V	75mA max.
Temperature Ranges	
Operating	0° to +70°C -25° to +85°C
Storage	-55° to +125°C
Dimensions	2.00" x 2.00" x 0.42"
Weight	1.5 ounces

NOTES:
1. Amplitude limited to 10Vrms when using ±12V supplies.
2. Voltage range on ±V is ±11.5V to ±16.5V.

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The total internal power dissipation of the 210A200 can be calculated as follows:

$$PD = (+Vsupply)(+Isupply) - (Vout)(Iout)(\cos\Phi)$$

where: PD = power dissipation in watts

Φ = load phase angle

It is important to note that the junction temperature (Θ_j) of the output amplifiers must be kept below 125°C. If this temperature is exceeded, the output amplifiers will automatically shut down. Once this temperature drops back below 125°C, the amplifier outputs will be automatically restored.

AMPLITUDE CONTROL

The oscillator output amplitude is controlled by input bits 1-10. These input bits are positive LSTTL logic. Bit 1 is the MSB and is weighted 7.5Vrms at the RH-RL output. Bit 10 is the LSB and is weighted 0.0143Vrms. These are latched inputs; when ENM and ENL are at logic "1", the latches are transparent. ENM controls bits 1-8 and ENL controls bits 9 and 10.

FREQUENCY CONTROL

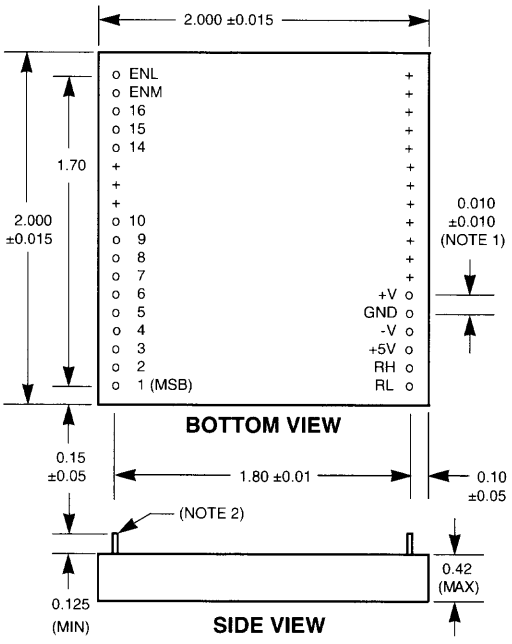
Eight output frequencies may be selected via bits 14, 15 and 16. These are also latched inputs and the latch control input is ENL. Refer to the table below for frequency selection.

FREQUENCY TRUTH TABLE			
INPUT STATES			FREQUENCY
14	15	16	
0	0	0	400Hz
0	0	1	800Hz
0	1	0	1200Hz
0	1	1	2000Hz
1	0	0	2500Hz
1	0	1	3000Hz
1	1	0	4000Hz
1	1	1	5000Hz

OSCILLATOR OUTPUT

The oscillator output consists of two power amplifiers, the RH output and its complement the RL output. This complementary output scheme allows for a full 15Vrms output with only ±15V supplies. Caution, do not attempt to ground either of these outputs.

MECHANICAL OUTLINE



NOTES:
1. Non-cumulative.
2. Rigid 0.025 diameter pins suitable for solder-in or plug-in applications.
3. Dimensions are in inches.

ORDERING INFORMATION

210A200 * *

- * — Add B for 168 hour power burn-in
- * — Add IT for -25° to +85°C Operating temperature range

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