



## FEATURES

- Subminiature Size
- Analog Multiplexer
- Bi-level Multiplexer
- Serial Data Interface (RS232 or RS422)
- Programmable Bit Rate
- Programmable Bits Per Word
- Programmable Frame Rate
- Programmable Sync Code
- Subcommutation and Supercommutation Capabilities
- Pre-Modulation Filter
- NRZ-L, RNRZ-L, or Bi-phase-L Output Codes

## INTRODUCTION

The PCM24B Encoder was designed for applications requiring subminiature size, low weight, low cost, and the ability to withstand harsh environmental conditions.

Each PCM24B is manufactured in modular form from housings of high grade aluminum alloy. All electronic circuits are assembled on printed circuit boards using the latest in surface mount components. The PCM24B construction methods provide for an extremely rugged, durable, and reliable encoder.

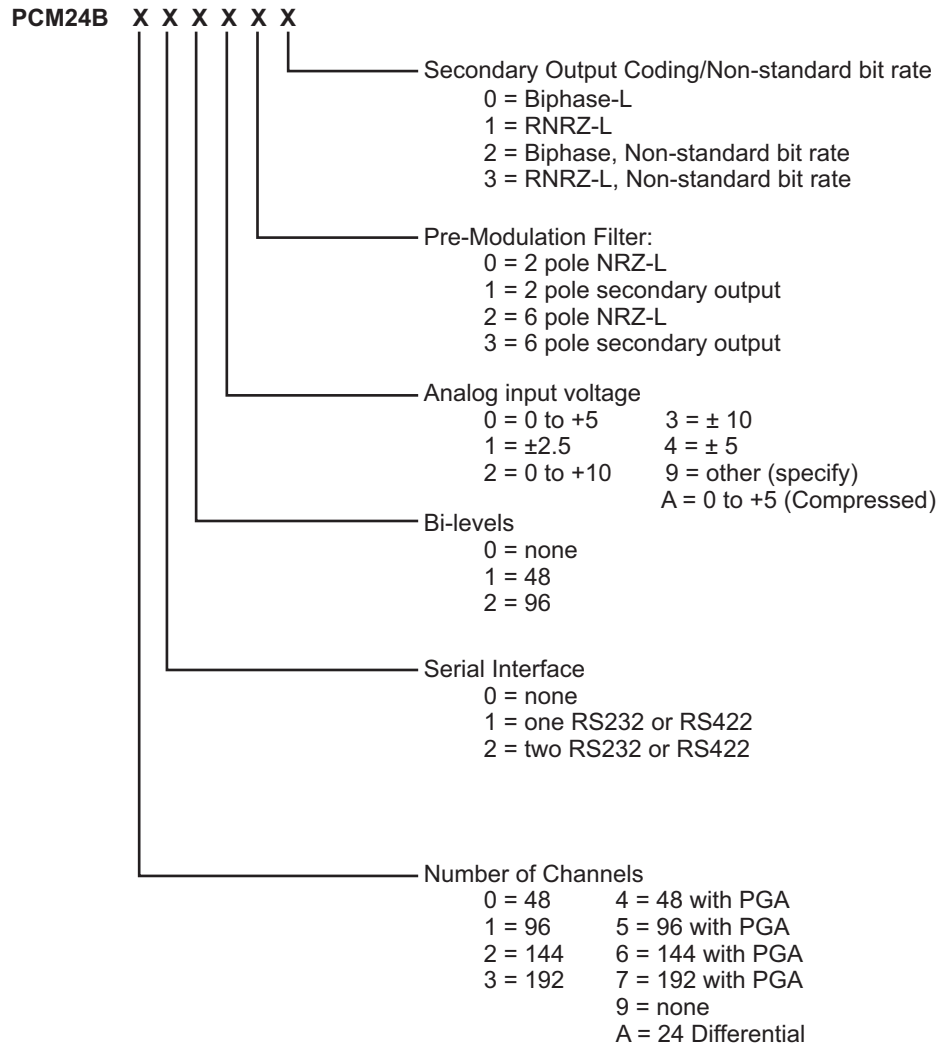
The PCM24B utilizes a versatile bus structure which makes the unit adaptable to many different input signal configurations by stacking modules. The PCM24B offers full programmability on many functions, a feature that is unique for a unit of this size. The PCM24B can be programmed in the field via the use of the CIM1000, Computer Interface Module and Microcom's 24B software.



**communications**

## ORDERING INFORMATION

The PCM24B is available with various combinations of analog channels, bi-levels, serial interfaces, input voltages, and pre-modulation filters. Order by model number as shown:

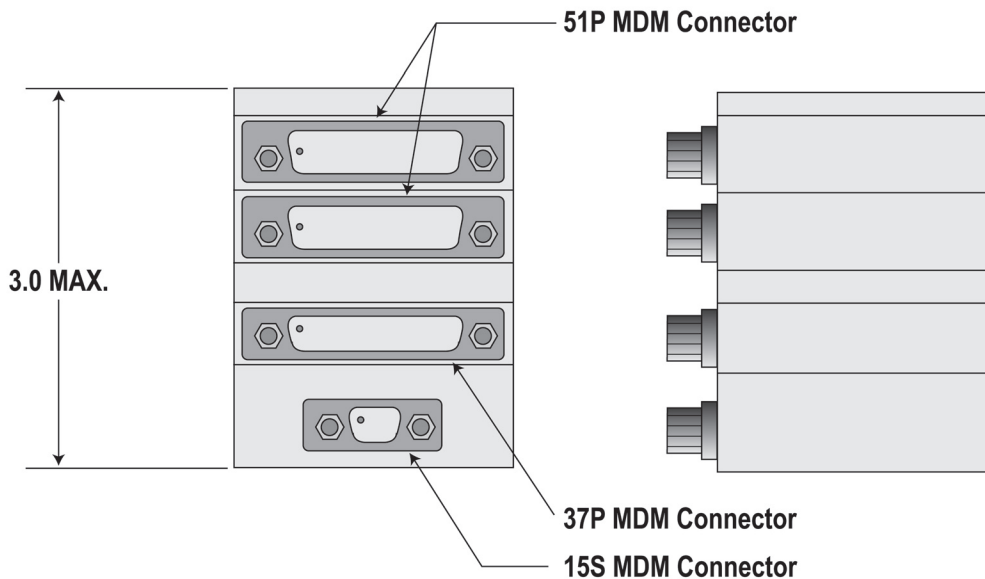
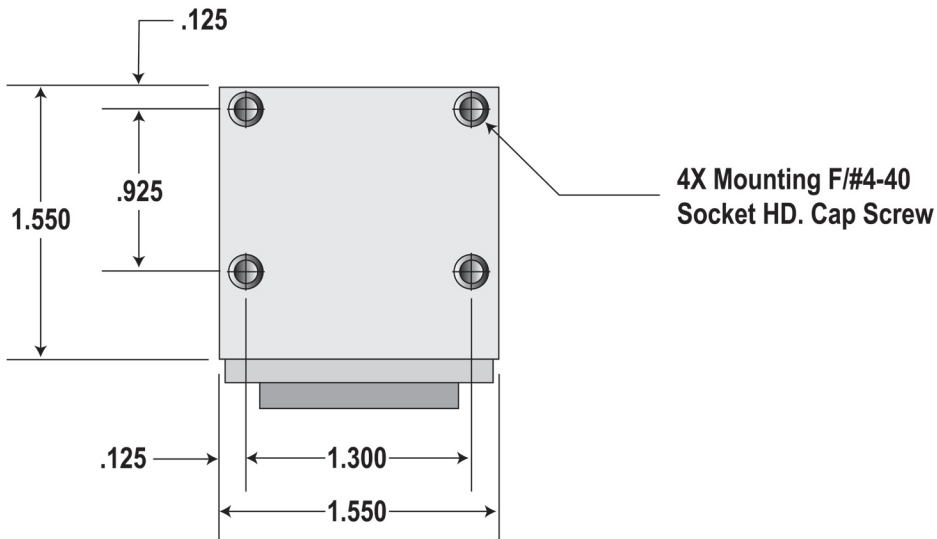


**NOTES:**

In addition to the model number, when ordering, please specify:

1. Output level (5V p-p maximum)
2. Bit rate
3. Baud rate for each serial interface

### PCM24B Outline Drawing



**Configuration shown includes 48 analog channels, 48 bi-level channels.**

## OPTIONS

The following options are available:

- Six pole Bessel type pre-modulation filter
- Bi-level multiplexers (Note 1)
- Serial data interfaces (RS232 or RS422) (Note 1)
- Programmable Gain Amplifier
- Output coding - NRZ-L, or BiØ-L, or RNRZ-L
- Higher environments

### Notes:

1. Bi-levels and Serial interfaces are limited to a maximum of two sections for both. This would allow for: 2 bi-level modules, 2 serial modules, or 1 each bi-level and serial modules.

## SPECIFICATIONS

### General

Bit Rate:	Programmable up to 2 MBPS (Notes 1, 2, 3)
Bit Rate Stability:	±0.1%
Bits Per Word:	Programmable 8, 10, or 12 (Note 1)
A/D Accuracy: (@+25°C)	±0.5% (Av = 1)
Words Per Frame:	Programmable (8 K words max.) (Note 1)
Frame Sync Words:	Programmable (Note 1)
Major Frame Sync	
- Type:	SFID
Major Frame Sync	
- Location:	Programmable (Note 1)
Pre-Modulation Filter:	
Type	
Standard:	2 pole; amplitude level and cut-off frequency are factory set.
Optional:	6 pole Bessel type; amplitude level and cutoff frequency are factory set.
Output Code:	NRZ-L standard; BiØ-L or RNRZ-L optional
PCM Output Code:	NRZ-L standard; BiØ-L or RNRZ-L optional
Diagnostic Outputs:	Bit Clock, Word Clock, Frame Clock, Major Frame Clock

### Analog Multiplexer

Number of input channels:	48, 96, or 144
Type:	High level single ended
Input range:	0 to 5V or ±2.5V
Input Impedance:	10 M ohms min.
Input Protection:	Up to ±35V

### Bi-level Multiplexer

Input Quantity:	48 or 96 single ended bi-level bits
Word Length:	Automatic, dependent upon PCM word length
Threshold Voltage:	2.5V standard (other levels available)
Input Impedance:	100k ohm min.
Input Protection:	Up to ±35V

### Serial Data Interface

Type:	RS232 or RS422
Data Rate:	125k Baud max.
Data Format:	1 start bit, 8 data bits, 1 stop bit

### Power Supply

Input Voltage:	28 VDC ±4 VDC
Input Current:	Dependent upon configuration
Overvoltage and Reverse Polarity Protection:	Up to ±40 VDC

### Mechanical

Dimensions:	1.55" x 1.55" x 3.0" max. (Height dependent upon configuration)
Weight:	8 oz max.
Connectors	
Power and diagnostics:	MDM15
Programming:	MDM37
Inputs:	MDM51

### Environmental

Temperature	
Operating:	-20°C to +70°C
Non-Operating:	-55°C to +100°C
Vibration:	20 - 2000 Hz, 30 g, 0.4" d/a max., 3 axes
Shock:	250g, 11 ms, 3 axes
Acceleration:	200g, linear, 2 minutes
Humidity:	95% RH, 2 hours at +55°C
Altitude:	Unlimited

### Notes:

1. The PCM24B is programmable by the use of the CIM1000-003 Computer Interface Module. The CIM1000-003 provides serial to parallel conversion of the hexadecimal programming instructions required to perform frame format, supercommutation, subcommutation, and data channel setup of the PCM24B. The CIM1000-003 includes the 24B software package.
2. Standard programmable bit rates are: 200 KBPS, 300 KBPS, 400 KBPS, 500 KBPS, 600 KBPS, 750 KBPS, 1.0 MBPS, 1.2 MBPS, 1.5 MBPS, and 2.0 MBPS.
3. Custom bit rates are available.



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