



Model 3171B

DTMF Encoder

INSTRUCTION MANUAL

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Description

Monroe Model 3171B DTMF Encoder is a 3" x 5" circuit card module designed to convert a 4-line parallel BCD logic input into a DTMF audio output.

The 3171B consists of a BCD converter, DTMF tone generator, and an audio amplifier with a 600 ohm transfer output.

Specifications

Logic HI:	> 2.0 V
Logic Low:	< 0.8 V
Output Level:	2mV to 2V RMS; adjustable
+5 VDC Output:	300mA maximum
Power Requirements:	+12 VDC @ 75 mA without auxiliary +5V connected
Physical:	5" H x 3" W x 0.6" D

Accessories included:
Manual, Connector kit

Installation

The 3171B is designed to plug into a Monroe 3000RK 20-pin edge connector. Pin functions are listed below.

<u>PIN#</u>	<u>FUNCTION</u>
1	Auxiliary + 5 VDC output
3	Ground (circuit common)
4	+ 12VDC input
6	Enable input: Must be connected to circuit common (pin 3) in order to produce an output signal
7	Binary input "E": Must remain open circuit (logic HI) for 3171B-1 firmware
9, 10	600 ohm DTMF audio output
D	Binary input "A"
E	Binary input "B"
F	Binary input "C"
H	Binary input "D"
L	AC coupled audio output

Note: 3171B-1 firmware to be used with 3185 DTMF to BCD decoder

Binary/Frequency settings are as follows:

Digit	BCD	FREQ
	1 2 4 8	(Hz.)
1	1 0 0 0	697/1209
2	0 1 0 0	697/1336
3	1 1 0 0	697/1477
4	0 0 1 0	770/1209
5	1 0 1 0	770/1336
6	0 1 1 0	770/1477
7	1 1 1 0	852/1209
8	0 0 0 1	852/1336
9	1 0 0 1	852/1477
0	0 0 0 0	941/1336
*	0 1 0 1	941/1209
#	1 1 0 1	941/1477
A	0 0 1 1	697/1633
B	1 0 1 1	770/1633
C	0 1 1 1	852/1633
D	1 1 1 1	941/1633

Operation

Relay contacts or open collector NPN transistor switches may be used to select desired output tones. Diodes may be used for input coding, which requires selections of several input combinations, however, the voltage drop at the input pin should not exceed 0.8V for “grounded” connection.

The DTMF audio output level from the 600-ohm transformer on the 317B is adjustable. This level, controlled by R3, may be set by connecting a 600-ohm load and AC voltmeter across the output. With all binary input pins open circuit (logic HI) and then grounding (logic LOW) the ENABLE line (pin-6); a continuous tone (digit “D” for –1) will be generated at the output for as long as the ENABLE line is grounded.