



# DIGITAL TO ANALOG CONVERTERS

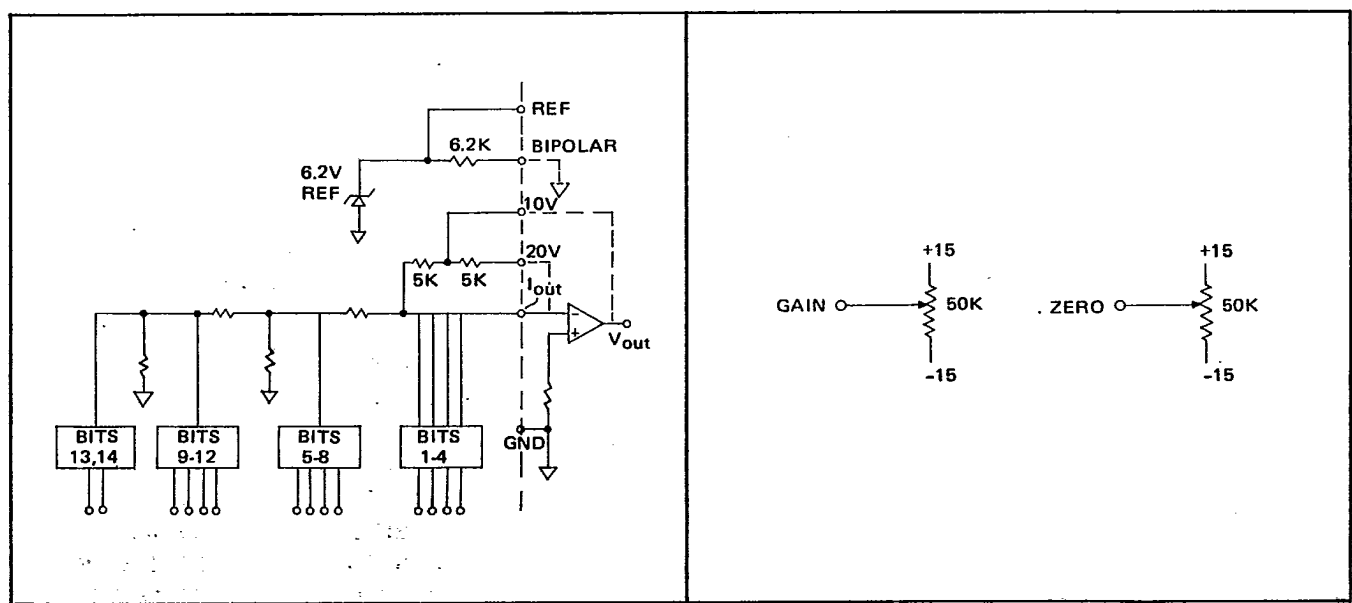
## SERIES 2470 14 BIT PRECISION HIGH SPEED D/A CONVERTERS

THESE MODULES' HIGH ACCURACY AND TIGHT SPECIFICATIONS PERMIT FULL UTILIZATION OF THEIR 14 BIT RESOLUTION, MAKING THEM PRACTICAL FOR DRIVING AND CONTROLLING VERY HIGH PERFORMANCE ANALOG DISPLAYS.



- FULL 14 BIT ACCURACY
- GAIN STABILITY TO 5 PPM/°C
- BIPOLAR ZERO DEVIATION UNDER 5 PPM/°C
- 700 NANoseconds (MAX) SETTLING TO 0.003%
- FIVE STANDARD PROGRAMMABLE VOLTAGE RANGES
- SMALL SIZE (2" x 2" x 0.4")

Models 2470 and 2471 are true 14 bit DAC's, featuring full 14 bit accuracy as well as resolution. Maximum linearity deviation over the full 0°C to 70°C operating temperature range is 3.0 ppm/°C max. (1.0 ppm/°C typ.) This family utilizes a unique DMC high speed internal reference scheme to enhance both fast settling and tight TC performance. Settling time to 0.003% is 500 nsec typical, 700 nsec max. Model 2470 gain stability is within ±7 ppm/°C max. Model 2471 features gain and bipolar zero stability within ±5 ppm/°C max. Any one of five standard voltage ranges, programmed with internal resistor networks, can be selected by merely interconnecting external pins. These modules are fully encapsulated, with DMC's own void-free techniques, for high mechanical reliability.



BLOCK DIAGRAM

ADJUSTMENT FOR GAIN, ZERO

**Dynamic Measurements Corp.** 6 Lowell Avenue, Winchester, Massachusetts 01890  
 (617) 729-7870 Cable: DYMECO TWX (710) 348-6596

T-51-09-05

**SPECIFICATIONS**

(Typical at 25°C, nominal supply voltage, unless otherwise specified)  
(Minimum Warmup of 10 minutes)

Resolution: <span style="color: blue;">查询"2471"供应商</span>	14 Bits
Accuracy:	± 0.006% of F.S. ± 1/2 LSB (Max. Deviation)
Temperature Stability:	
Max. Gain Deviation	±7 ppm/°C (2470) ±5 ppm/°C (2471)
Max. Bipolar Zero Deviation	±12 ppm/°C (2470) ±5 ppm/°C (2471)
Settling Time:	
To 0.01%	300nsec typ.
To 0.003%	500nsec typ. 700nsec max.
Input (DTL/TTL Compatible) Coding:	Complementary Binary (Unipolar) Complementary Offset Binary (Bipolar)
Full Scale Output:	0mA to +2mA (Unipolar) -1mA to +1mA (Bipolar)
Power Requirements:	±15V @ 25mA +5V @ 35mA
Power Supply Rejection Ratio:	0.02%/%
Temperature:	
Operating	0°C to 70°C (derate 50% over -25°C to +85°C)
Storage	-55°C to +85°C
Relative Humidity:	0% to +95%, noncondensing

**OUTPUT PROGRAMMING (with external op amp):**

Output Range	External Pin Connections
0V to +5V	10V to Output*, 20V to I <sub>out</sub> , Bip to Gnd
0V to +10V	10V to Output, Bip to Gnd
±2.5V	10V to Output, 20V to I <sub>out</sub> to Bip
±5V	10V to Output, I <sub>out</sub> to Bip
±10V	20V to Output, I <sub>out</sub> to Bip

\*Output is output of op-amp. I<sub>out</sub> should always go to Summing Junction of op-amp.

<p><b>OUTLINE DRAWING/PIN KEY</b></p>	<p><b>PIN CONNECTIONS</b></p> <table border="0"> <tr> <td>1 BIT 1 (MSB)</td> <td>14 BIT 14</td> </tr> <tr> <td>2 BIT 2</td> <td>15 +5V</td> </tr> <tr> <td>3 BIT 3</td> <td>16 +15V</td> </tr> <tr> <td>4 BIT 4</td> <td>17 -15V</td> </tr> <tr> <td>5 BIT 5</td> <td>18 COM</td> </tr> <tr> <td>6 BIT 6</td> <td>19 GAIN</td> </tr> <tr> <td>7 BIT 7</td> <td>20 I<sub>out</sub></td> </tr> <tr> <td>8 BIT 8</td> <td>21 10V FS</td> </tr> <tr> <td>9 BIT 9</td> <td>22 20V FS</td> </tr> <tr> <td>10 BIT 10</td> <td>23 ZERO</td> </tr> <tr> <td>11 BIT 11</td> <td>24 SIG COMMON</td> </tr> <tr> <td>12 BIT 12</td> <td>25 V<sub>ref</sub></td> </tr> <tr> <td>13 BIT 13</td> <td>26 BIP OFFSET</td> </tr> </table>	1 BIT 1 (MSB)	14 BIT 14	2 BIT 2	15 +5V	3 BIT 3	16 +15V	4 BIT 4	17 -15V	5 BIT 5	18 COM	6 BIT 6	19 GAIN	7 BIT 7	20 I <sub>out</sub>	8 BIT 8	21 10V FS	9 BIT 9	22 20V FS	10 BIT 10	23 ZERO	11 BIT 11	24 SIG COMMON	12 BIT 12	25 V <sub>ref</sub>	13 BIT 13	26 BIP OFFSET
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Dimensions in inches mating socket: DMC Model 6524 (2 req'd)