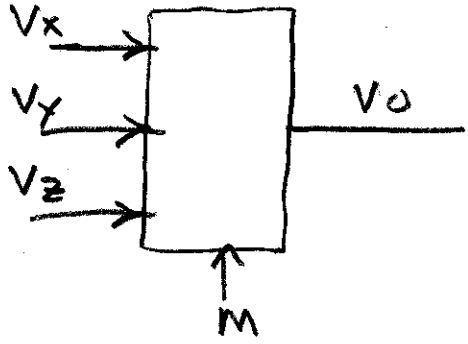
ANALOG COMPUTATIONAL ELEMENTS

THERE ARE A NUMBER OF POPULAR ICs MADE BY ANALOG DEVICES, BURR-BROWN, NATIONAL, AND OTHERS THAT IMPLEMENT THE FOLLOWING FUNCTION

$$V_O = K V_Y \left(\frac{V_Z}{V_X}\right)^M$$



SIMPLER VERSIONS USE M FIXED AT 1 INTERNALLY.

$$V_O = K\left(\frac{V_X V_Y}{10} - V_Z\right)$$

WITH APPROPRIATE CONNECTIONS, THE FOLLOWING FUNCTIONS CAN BE BUILT:

$V_O = 0.1\, V_X V_Y$ $\quad -10 \le V_X, V_Y \le +10V$

$V_O = 10\, V_Z / V_Y$ $\quad -1 \le (V_Z/V_Y) \le +1$

$V_O = 0.1\, V_X^2$ $\quad -10 \le V_X \le +10V$

$V_O = \sqrt{10 V_X}$ $\quad 0 \le V_X \le +10V$

Example: MEASURING TRUE RMS