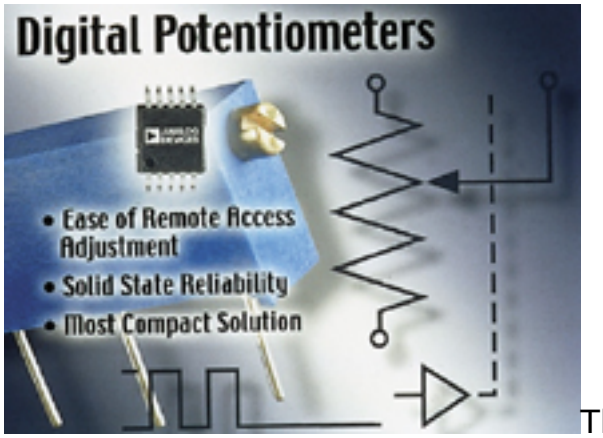
Nonvolatile Memory Digital Potentiometers



These digital potentiometers perform the same electronic adjustment function as a mechanical potentiometer or variable resistor, yet offer solid-state reliability and compact packaging. Available in single-, dual-, and quad-channel models with a range of setting options (1024 positions for the single AD5231, 256 positions for the dual AD5232 and 64 positions for the quad AD5233), these devices allow simplified adjustments in both rheostat and potentiometer divider mode applications. Three terminal resistance values are offered (10 k, 50 k and 100 k Ohms) in this product family, which automatically stores the wiper settings during unexpected equipment power loss.

The versatile programming of the AD5231/AD5232/AD5233 (via a microcontroller) allows multiple modes of operation and adjustment, including direct program setting, increment/decrement control, right/left shift for 6 dB changes, and a pulse mode for direct push-button control. Nonvolatile digital output pins simplify control of external devices such as LED on/off or relay settings. Multiple package daisy chaining saves additional microcontroller pins. Extra bytes of internal nonvolatile memory are accessible through the SPI-compatible serial data interface and are available for storing additional system constants.

These devices are offered in compact TSSOP 16- and 24-lead plastic packages and are well-suited for optical networking, instrumentation and telecommunications applications. They are also designed for precision adjustment applications such as power supply voltages, sensors, LED laser intensity levels, and gyro sensors, and are ideal replacements for mechanical potentiometers.

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