Digitizer Encyclopedia Article

Digitizer

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Digitizer

Digitizers are computer hardware devices used to convert analog (continuously varying) signals into a digital or electrical signal. This process allows many common measurements--such as temperature, air pressure or engine speed which are usually output in analog form--to be converted and used by digital computer s. Perhaps the most component of digitizers today is the digitizing tablet (also known as area digitizers), first developed by the Rand Corporation in 1964. Graphic images can be traced on the digitizer tablet using a stylus, and the corresponding image is converted and displayed on the computer screen in digital format. Digitizing tablets are commonly used in the CAD/CAM and graphics fields allowing drawings, charts or graphs to be input in pictorial form onto the computer screen. Another example of digitizer use occurs in the conversion of speech into a digital format. A microphone is used to break speech pressure waves into equivalent varying voltages and the electronic digitizer converts the voltages into digital code. While this type of digitizer depends mainly on electronics, there are also linear and rotary digitizers, which combine optical and electronic sensing devices. Linear and rotary digitizers are most commonly used in engineering or scientific applications to provide digital information on the position of a rotating shaft.