Kernel driver adc128d818

Supported chips:

- Texas Instruments ADC818D818

  Prefix: 'adc818d818'

  Addresses scanned: I2C 0x1d, 0x1e, 0x1f, 0x2d, 0x2e, 0x2f

  Datasheet: Publicly available at the TI website https://www.ti.com/

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Description

This driver implements support for the Texas Instruments ADC128D818. It is described as 'ADC System Monitor with Temperature Sensor'.

The ADC128D818 implements one temperature sensor and seven voltage sensors.

Temperatures are measured in degrees Celsius. There is one set of limits. When the HOT Temperature Limit is crossed, this will cause an alarm that will be reasserted until the temperature drops below the HOT Hysteresis. Measurements are guaranteed between -55 and +125 degrees. The temperature measurement has a resolution of 0.5 degrees; the limits have a resolution of 1 degree.

Voltage sensors (also known as IN sensors) report their values in volts. An alarm is triggered if the voltage has crossed a programmable minimum or maximum limit. Note that minimum in this case always means 'closest to zero'; this is important for negative voltage measurements. All voltage inputs can measure voltages between 0 and 2.55 volts, with a resolution of 0.625 mV.

If an alarm triggers, it will remain triggered until the hardware register is read at least once. This means that the cause for the alarm may already have disappeared by the time the alarm is read. The driver caches the alarm status for each sensor until it is at least reported once, to ensure that alarms are reported to user space.

The ADC128D818 only updates its values approximately once per second; reading it more often will do no harm, but will return 'old' values.

In addition to the scanned address list, the chip can also be configured for addresses 0x35 to 0x37. Those addresses are not scanned. You have to instantiate the driver explicitly if the chip is configured for any of those addresses in your system.