

Kernel driver ds1621

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Supported chips:

- \* Dallas Semiconductor DS1621  
Prefix: 'ds1621'  
Addresses scanned: I2C 0x48 - 0x4f  
Datasheet: Publicly available at the Dallas Semiconductor website  
<http://www.dalsemi.com/>
- \* Dallas Semiconductor DS1625  
Prefix: 'ds1621'  
Addresses scanned: I2C 0x48 - 0x4f  
Datasheet: Publicly available at the Dallas Semiconductor website  
<http://www.dalsemi.com/>

Authors:

Christian W. Zuckschwerdt <zany@triq.net>  
valuable contributions by Jan M. Sendler <sendler@sendler.de>  
ported to 2.6 by Aurelien Jarno <aurelien@aurel32.net>  
with the help of Jean Delvare <khali@linux-fr.org>

Module Parameters

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- \* polarity int  
Output's polarity: 0 = active high, 1 = active low

Description

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The DS1621 is a (one instance) digital thermometer and thermostat. It has both high and low temperature limits which can be user defined (i.e. programmed into non-volatile on-chip registers). Temperature range is -55 degree Celsius to +125 in 0.5 increments. You may convert this into a Fahrenheit range of -67 to +257 degrees with 0.9 steps. If polarity parameter is not provided, original value is used.

As for the thermostat, behavior can also be programmed using the polarity toggle. On the one hand ("heater"), the thermostat output of the chip, Tout, will trigger when the low limit temperature is met or underrun and stays high until the high limit is met or exceeded. On the other hand ("cooler"), vice versa. That way "heater" equals "active low", whereas "conditioner" equals "active high". Please note that the DS1621 data sheet is somewhat misleading in this point since setting the polarity bit does not simply invert Tout.

A second thing is that, during extensive testing, Tout showed a tolerance of up to +/- 0.5 degrees even when compared against precise temperature readings. Be sure to have a high vs. low temperature limit gap of at least 1.0 degree Celsius to avoid Tout "bouncing", though!

The alarm bits are set when the high or low limits are met or exceeded and are reset by the module as soon as the respective temperature ranges are left.

The alarm registers are in no way suitable to find out about the actual

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status of Tout. They will only tell you about its history, whether or not any of the limits have ever been met or exceeded since last power-up or reset. Be aware: When testing, it showed that the status of Tout can change with neither of the alarms set.

Temperature conversion of the DS1621 takes up to 1000ms; internal access to non-volatile registers may last for 10ms or below.