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# **Nanoshield\_RTC Documentation**

***Release 1.0***

**Nanoshield\_RTC**

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<b>1</b>	<b>Class Documentation</b>	<b>3</b>
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This is the Arduino software library to access the RTC functionality of the RTCMem Nanoshield.

- Source code: [https://github.com/circuitar/Nanoshield\\_RTC](https://github.com/circuitar/Nanoshield_RTC)
- Documentation: <http://nanoshield-rtc.readthedocs.org/>
- Reference board: ‘**Nanoshield RTCMem**’\_ from **Circuitar**\_

Library features include:

- Read date and time from the RTCMem Nanoshield
- Write date and time to the RTCMem Nanoshield

To install, just click **Download ZIP** and install it using **Sketch > Include Library... > Add .ZIP Library** in the Arduino IDE.



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## Class Documentation

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### class DS1307

Inherits from DS3231

#### Public Functions

bool **begin** (uint8\_t *clkout* = DS1307\_CLKOUT\_32768\_HZ)

Initializes the *DS1307* object.

Disable all alarms and enable both the clkout and 1Hz square wave output.

- DS1307\_CLKOUT\_4096\_HZ
- DS1307\_CLKOUT\_8192\_HZ
- DS1307\_CLKOUT\_32768\_HZ

**Return** True on success. False if there were errors.

#### Parameters

- *clkout* - Output clock. Default at 32768. Use one of these:
  - DS1307\_CLKOUT\_1\_HZ

bool **start** ()

Starts the RTC.

**Return** True on success. False if there were errors.

bool **stop** ()

Stops the RTC.

**Return** True on success. False if there were errors.

**Warning:** doxygenclass: Unable to find project 'DS3231' in breathe\_projects dictionary

### class Nanoshield\_RTC

Subclassed by DS3231

## Public Functions

### **Nanoshield\_RTC ( )**

Constructor.

Creates the object to access the Nanoshield RTC.

bool **begin** (uint8\_t *clkout* = NANOSHIELD\_RTC\_CLKOUT\_1\_HZ)

Initializes the Nanoshield RTC object.

Disables all alarms and set the clock output to *clkout*.

**Return** True on success. False if there were errors.

#### **Parameters**

- *clkout* - The clock output. Use one of these:
  - NANOSHIELD\_RTC\_CLKOUT\_32768\_HZ
  - NANOSHIELD\_RTC\_CLKOUT\_1024\_HZ
  - NANOSHIELD\_RTC\_CLKOUT\_32\_HZ
  - NANOSHIELD\_RTC\_CLKOUT\_1\_HZ

bool **start** ( )

Starts the RTC.

**Return** True on success. False if there were errors.

bool **stop** ( )

Stops the RTC.

**Return** True on success. False if there were errors.

bool **write** (int *sec*, int *min*, int *hour*, int *day*, int *wday*, int *mon*, int *year*)

Sets the RTC date and time.

**Return** True on success. False if there were errors.

#### **Parameters**

- *sec* - Seconds from 0 to 59.
- *min* - Minutes from 0 to 59.
- *hour* - Hour from 0 to 23.
- *day* - Day from 1 to 31.
- *wday* - Weekday from 0 to 6 as Sunday to Saturday respectively.
- *mon* - Month from 1 to 12.
- *year* - Year (4 digits).

bool **writeSeconds** (int *sec*)

Sets the RTC seconds.

**Return** True on success. False if there were errors.

#### **Parameters**



- `sec` - Seconds from 0 to 59.

bool **writeMinutes** (int *min*)  
Sets the RTC minutes.

**Return** True on success. False if there were errors.

**Parameters**

- `min` - Minutes from 0 to 59.

bool **writeHours** (int *hour*)  
Sets the RTC hour.

**Return** True on success. False if there were errors.

**Parameters**

- `hour` - Hour from 0 to 23.

bool **writeDay** (int *day*)  
Sets the RTC day.

**Return** True on success. False if there were errors.

**Parameters**

- `day` - Day from 1 to 31.

bool **writeWeekday** (int *wday*)  
Sets the RTC weekday.

**Return** True on success. False if there were errors.

**Parameters**

- `wday` - Weekday from 0 to 6 as Sunday to Saturday respectively.

bool **writeMonth** (int *mon*)  
Sets the RTC month.

**Return** True on success. False if there were errors.

**Parameters**

- `mon` - Month from 1 to 12.

bool **writeYear** (int *year*)  
Sets the RTC year.

**Return** True on success. False if there were errors.

**Parameters**

- `year` - Year (4 digits).

bool **read** ()  
Read datetime from RTC and stores internally.  
The datetime can be accessed with getters or `getTime`, that returns a timestamp string.

**Return** True on success. False if there were errors.

**See** *getTime()*

*getSeconds()*

*getMinutes()*

*getHours()*

*getDay()*

*getWeekday()*

*getMonth()*

*getYear()*

void **getTime** (char \**time*)

Get a timestamp of the last reading.

The timestamp is in format YYYY-MM-DD HH:MM:SS.

**Parameters**

- *time* - Output pointer to timestamp.

int **getSeconds** ()

Gets the seconds of the last reading.

**Return** Seconds of the last reading.

int **getMinutes** ()

Gets the minutes of the last reading.

**Return** Minutes of the last reading.

int **getHours** ()

Gets the hour of the last reading.

**Return** Hour of the last reading.

int **getDay** ()

Gets the day of the last reading.

**Return** Day of the last reading.

int **getWeekday** ()

Gets the weekday of the last reading.

**Return** Weekday of the last reading.

int **getMonth** ()

Gets the month of the last reading.

**Return** Month of the last reading.

int **getYear** ()

Gets the year of the last reading.

**Return** Year of the last reading.

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This documentation was built using [ArduinoDocs](#).



## D

DS1307 (C++ class), 3  
DS1307::begin (C++ function), 3  
DS1307::start (C++ function), 3  
DS1307::stop (C++ function), 3

## N

Nanoshield\_RTC (C++ class), 3  
Nanoshield\_RTC::begin (C++ function), 4  
Nanoshield\_RTC::getDay (C++ function), 6  
Nanoshield\_RTC::getHours (C++ function), 6  
Nanoshield\_RTC::getMinutes (C++ function), 6  
Nanoshield\_RTC::getMonth (C++ function), 6  
Nanoshield\_RTC::getSeconds (C++ function), 6  
Nanoshield\_RTC::getTime (C++ function), 6  
Nanoshield\_RTC::getWeekday (C++ function), 6  
Nanoshield\_RTC::getYear (C++ function), 6  
Nanoshield\_RTC::Nanoshield\_RTC (C++ function), 4  
Nanoshield\_RTC::read (C++ function), 5  
Nanoshield\_RTC::start (C++ function), 4  
Nanoshield\_RTC::stop (C++ function), 4  
Nanoshield\_RTC::write (C++ function), 4  
Nanoshield\_RTC::writeDay (C++ function), 5  
Nanoshield\_RTC::writeHours (C++ function), 5  
Nanoshield\_RTC::writeMinutes (C++ function), 5  
Nanoshield\_RTC::writeMonth (C++ function), 5  
Nanoshield\_RTC::writeSeconds (C++ function), 4  
Nanoshield\_RTC::writeWeekday (C++ function), 5  
Nanoshield\_RTC::writeYear (C++ function), 5